Published every Saturday by the Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa., with executive offices at 30 Church Street, New York

All communications should be addressed to the New York Office, 30 Church Street

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The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free; United States, Mexico and Canada, $6.00. Foreign countries, not including daily editions $8.00.

Subscriptions for the fourth issue each month only (published in two sections, the second of which is the Motor Transport Section) payable in advance and postage free; United States, Mexico and Canada, $1.00; foreign countries, $2.00. Single copies, 25 cents each.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name Registered U. S. Patent Office.

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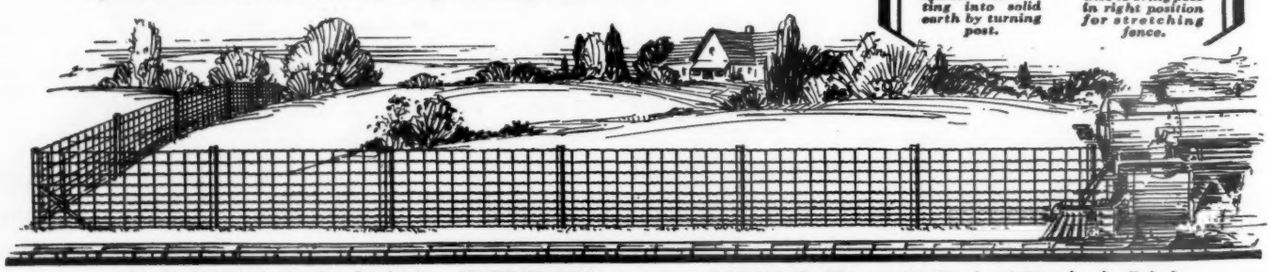
Figure 3 Anchor expanded. Post can be turned around as many times as necessary clockwise to bring post in right position for stretching fence.



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Railway Age

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Economic Equality of Opportunity for the Railways

ONE of the most significant facts about the present transportation situation in the United States is the way evidence accumulates showing that many persons of intelligence and influence in all parts of the country understand it. The office of the *Railway Age* has been flooded recently with editorials from newspapers and magazines, resolutions adopted by commercial organizations and letters from business men, railway labor leaders and railway employees, in which grave apprehension has been expressed regarding the railway situation, and statements have been made showing that the writers understand the grossly unfair competition to which the railways are being subjected and the government policies which are so largely creating it. If the many expressions upon this subject we are receiving are a criterion, there exists and is rapidly growing a public sentiment which will give effective backing to any reasonable and definite program that may be announced to nullify the influences now so seriously menacing the future of the railways.

We publish elsewhere in this issue an article giving some of the evidence that has come to us regarding the storm of public resentment that is rising against the present abuse of the highways by motor buses and trucks. Many of the attacks being made upon this abuse are accompanied by attacks upon the government's waterway policy.

On "Meeting Competition"

With respect to pipe line, water, and highway transportation, what do the railways and their employees want? They want the establishment of *economic equality of opportunity* between the railways and other means of transportation. Frequently we hear politicians and business men say that the railways, like many other industries, are merely being subjected to new forms of competition, and that, like other industries, they should not complain, but so adjust their service, operating costs and rates as to meet these new forms of competition. What other industry would be able successfully to meet competition backed, as that which confronts the railways is, by enormous funds raised by the taxing power of both the state and national governments? Private individuals and companies engaged in marketing farm products recently have complained bitterly that they are being ruined by the competition of the federal government under the Farm Relief act. They are receiving only the same kind of treatment as the railways, and yet the Chamber of Commerce of the United States has adopted a resolution denouncing the way public money is being used under the Farm Relief act. The Chamber of Commerce of the United States is composed of business men, many of whom want the benefit of the subsidizing of water and highway competition with the railways; and this doubtless is the reason why they denounce the "socialism" in the government's farm relief policy while seeing no "socialism" in the government's transportation policy.

To establish economic equality of opportunity between the railways and other means of transportation either the state and national governments must begin to subsidize and regulate the railways as they do other means of transportation, or quit subsidizing other means of transportation and begin to regulate them as they do the railways. As there is no chance for the adoption of the former alternative, in what way or ways should the latter be adopted?

One of the most serious threats to railway traffic is presented by the extension of pipe lines and their adaptation to new uses, such as the transportation of gasoline. The Act to Regulate Commerce makes pipe lines common carriers. They are constitutionally subject to the same kind of regulation as the railways. Under appropriate legislation their owners can be required to get certificates of public convenience and necessity for construction, they can be required to adopt all measures conducive to public safety, their rates can be regulated, their earnings can be limited, and they can be compelled, as each individual railway is, to pay over to the government one-half of any net operating income in excess of six per cent that they earn in any year. The transportation of gasoline by pipe line, unless every precautionary measure is taken, may be highly dangerous to public safety. The railways would be justified in excluding gasoline pipe lines

from their rights-of-way if for no reason excepting the danger to property and passengers. If pipe lines are to be developed with the object of diverting traffic from the railways and depriving railway men of employment, they should, at least, be subjected to regulation similar to that applied to the railways.

Inequality Between Railways and Highway Carriers

Our vast system of highways has been constructed for the use of private automobiles and other vehicles of similar size and weight. In all parts of the country they are being used more and more by motor coaches and trucks, and even trains of trucks and trailers, which greatly exceed private automobiles in size and weight. There is arising an outcry throughout the country that these huge motor coaches and trucks are driving private motorists and the farmer with his small truck off the highways and making their use increasingly dangerous. By a co-incidence, within a period of a few days the governors of both Missouri and Kansas were driven off the highways and their lives jeopardized by huge motor vehicles. The railways are strictly regulated at great expense to themselves in the interest of public safety. The number of persons being killed upon our highways is five times as great as the number being killed upon our railways. Why, then, should not commercial carriers on the highways be as strictly regulated in the interest of public safety as the railways are?

The actual difference between the damage done to the highways by private automobiles, on the one hand, and huge motor buses and trucks, on the other hand, has never apparently been accurately determined; but that the difference is very great and can be determined there can be no question. Furthermore, the width and length of motor coaches and trucks are so much greater than those of private automobiles that they are largely responsible for the growing necessity of widening highways all over the country. To whatever extent motor coaches and trucks are allowed to evade paying taxes for the use of the highways proportionate to the expense caused by their use of the highways, an unjust burden of taxation is imposed for their benefit upon private motorists, and the taxpaying public, and the effect is to subsidize their competition with the railways and thus deprive the railways of economic equality of opportunity in making rates and seeking traffic. The railways have a right to demand that carriers by highway shall be regulated as they are and forced to pay the full amount of every kind of cost that their use of the highways directly and indirectly causes the public. Only after this is done will they compete on a basis of economic equality with the railways and be economically entitled to take all traffic they can get.

Of course, exactly the same principles apply to water transportation. Present government policies completely deprive the railways of economic equality of opportunity with the waterways. The rates of steamships using the Panama canal should be regulated as those of the competing railways are regulated. The railways should be allowed to meet water competition on the Pacific coast by making lower rates to the coast than to the interior, because in no other way can they be placed on a basis of economic equality with the steamship lines. On sound economic principles there is no more reason why boats competing with the railways should be given free use of any waterway developed and maintained at public expense than why motor coaches and trucks should be given free use of highways developed and maintained at public expense. Doubtless it would be impracticable to have tolls imposed upon our rivers and canals; but if tolls are not to be charged, certainly no expenditure should be made upon any waterway without it having first been determined to be reasonably probable that there will result a saving in freight rates exceeding the resulting increase in taxes.

Should the Railways Fight?

All the railways want, and all any spokesman of them ever has indicated they want, is the opportunity to compete with other means of transportation upon equal terms; and it is plain that they are denied that opportunity when all competing means of transportation are aided by both government regulation and government subsidies. We hear intimations at times that if the railways fight for the economic equality of opportunity to which they are entitled they will array powerful political and business interests against them. Well, if they don't fight for it they will probably be ruined anyway. No industry in this country can ever be strong and well-managed enough permanently to withstand attacks upon its earnings from competitors who are largely or mainly financed and otherwise aided by the government. The railways and their employees have everything to gain and nothing to lose by fighting for their interests and rights. Furthermore, in our opinion, when railway executives begin making a really determined effort to protect their industry they will be astonished to find how much support they will receive.

The great mass of railway employees are growing tired of seeing their jobs threatened by the policies of their own governments. The great mass of private motorists are growing tired of being pushed off the highways by huge motor coaches and trucks. Business men and farmers are becoming aroused to a realization of the menace to the welfare of the entire country that is being presented by the railways' losses of traffic and earnings, the decline in railroad employment, and the curtailment of railway purchases. Never were the conditions more favorable for railway leaders to wage a contest for that economic equality of opportunity for the railways which is as much their right as that of any other industry and which is essential to the maintenance of good railway service and to the protection of the interests and rights of railway security-owners and railway employees.

Co-operation with Air Lines

ACCORDING to a recent announcement by the Department of Commerce, there are now 50 air transport lines operating in the United States. Some of these lines are carrying air mail, some carry express matter and most of them are now carrying passengers. Quite a few of the passenger-carrying air lines are benefiting from the co-operation of the railways, such co-operation taking the particular form of sale in railway ticket offices of tickets for transportation over air lines.

The virtues of co-operation have been generally extolled, and in this day when ruthless competition between industries is not unknown, the picture of the large and powerful railways giving aid and comfort to their little brother in the transportation family is heart-warming and tends to revive a tottering faith in human nature. But after all business is business, and it is perhaps not beside the point to wonder whether altruism cannot be carried to extremes.

In co-operating with the air lines, by helping them to sell their tickets and in arranging connecting schedules between trains and airplanes which reduce the time required to travel between certain points, the railways, it cannot be denied, are helping in a most tangible way to put the air transport business on its feet. Since this is directly in line with the policy of the government and of countless chambers of commerce, putting the air lines on their feet must be a very praise-worthy object. But is there any assurance that this already lusty animal which the railways are helping to nourish will not some day turn and bite the hand which has been feeding it? When air lines are still weak, they welcome the assistance of the railway. When they become strong, they extend their airplane service, eliminating the rail portion of air-rail journeys and make them all-air journeys instead. A case in point is the recently established 36-hour all-air schedule between New York and Los Angeles, Cal., over the route which was formerly an outstanding example of railway and air line co-operation, a 48-hour schedule between New York and Los Angeles being made by a combination of connecting trains and airplanes.

It is said that the airplane does not take all its traffic from the railways, but has a tendency to create a new traffic of its own, a traffic which would not move at all if it were not for the extremely fast transportation provided by the airplane. Nevertheless, it would be difficult to prove that the air lines, carrying a steadily increasing number of passengers, are not winning a substantial number of them from railway trains. To this extent, then, air transport lines are competitors of the railways, and their attempt to win the patronage of the railroads' customers should be viewed by the railways with as much disfavor as if air transportation were not surrounded by so much glamour.

How much traffic the air lines will carry in the future is a question which no one can answer now, except with a guess. But the railroads should recognize that their present assistance of the air lines may very well hasten the time when the latter will be handling a much larger volume of traffic than at present, much of which may be traffic now moving by railway. In the interest of improved transportation facilities, co-operation between railways and air lines should doubtless continue, but it might also be well for the railways to make sure that they will not suffer from the effects of their co-operation in the future.

Important Educational Plan Fostered by Security Owners

THERE has been organized in New York under the aegis of the National Association of Owners of Railroad and Public Utility Securities a group of railroad and financial men and students of economics and business which will hold regular monthly meetings to discuss important problems which the railroads and utilities have to face. Similar groups will be formed under local chairmen in other centers of population, with the purpose of fostering knowledge regarding these industries among those sufficiently interested to attend and participate in the programs of the meetings. An auspicious beginning has been made by the New York group by its success in securing for its speaker at its first meeting, to be held on November 18, the Hon. Thomas F. Woodlock, former Interstate Commerce Commissioner, whose subject will be "Valuation and Recapture."

A plain need for an enterprise such as this one has existed for a long time. The problems of the railways and the public utilities are not sufficiently understood even by men engaged in such work—and the appreciation of these problems by leaders of other industry and by publicists and students has possibly been even more inadequate. In fact, it is not too much to say that if these problems were sufficiently well known, that fact alone would automatically solve many of them. Most of the railroads' troubles arise from a misunderstanding of their accomplishments, their purposes and their methods. A step toward providing many local centers at which those interested may go to acquire the knowledge they seek should, therefore, be welcomed by earnest-minded railroad men everywhere. Information as to the plans being made for organization of one of these groups in your own locality may be obtained from the Security Owners' Association office at 21 West Fortieth street, New York. It is to be hoped that railroad men will interest themselves in furthering this educational enterprise, both by their participation and by encouraging others in positions of leadership to take part.

Public Reaction Favors Control of Trucks and Coaches

Investigations started by two governors force operators to conform to state regulations

THAT a reaction of the public on a national scale is occurring against present abuses in connection with motor coach and truck transportation on highways provided by the public is indicated by editorials appearing in many of the newspapers throughout the country, in resolutions being adopted by chambers of commerce, by the pressure being exerted by labor organizations and by the activities of numerous public officials, especially the governors of Missouri and Kansas. Governor Clyde M. Reed of Kansas, recently sent a letter to the state highway commission asking that body to make a thorough investigation of long trailers and trucks and oversize motor vehicles on public highways, so that the findings might be submitted to the next session of the legislature. Governor H. S. Caulfield of Missouri, ordered an investigation of the lengths of trucks and trailers with a view to curbing their lengths. By a coincidence the governors of both states, while riding in automobiles, recently were forced off the highway by long trucks and trailers.

Following the Kansas Highway Commission's investigation the state law which limits the length of trucks to 33 ft., with a 27-ft. allowance for trailers, is being enforced, and the commission has refused to renew the licenses of a number of trucks and trailers on the ground that they are a menace to motorists.

In Missouri, the Highway Commission notified motor vehicle operators that if the sizes and weights of motor coaches and trucks did not conform to the requirements of the law by October 27, 1930, a fine of $1,000 would be inflicted for each violation. When the operators appealed to the Missouri Public Service Commission for an injunction permitting them to operate long coaches until February, 1931, that body supported the Highway Commission by denying the application. Following this action, the large vehicles have been withdrawn from the highways of that state.

Labor Organizations Understand Effects on Employment

Probably the most interesting development in the agitation against the free use of the highways is the railway labor organizations' understanding that as motor coaches and trucks take business away from the railways, the latter are forced to curtail employment. Direct action to prevent the serious injury of the railway transportation system now threatened by "unregulated and unreliable transportation agencies" was urged by the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees in a resolution adopted at a conference of the general chairman of the organization in St. Louis, Mo., on October 27. This resolution, which was published in the *Railway Age* of November 8, urges that immediate steps be taken by state and national agencies to determine the true cost to the public of providing and maintaining highways that are used by operators of motor trucks and motor coaches, and that state and national governments should require trucks and motor coaches to standardize rates and service, to provide for the safety of passengers and goods transported and to safeguard the lives and property of other users of the highways. The resolution also states that the principles underlying present labor laws should be extended to cover the employees of motor truck and motor coach operators.

Further evidence that railway employees are endeavoring to protect the railways and themselves appears in an article written by a conductor and published in the magazine of the Order of Railway Conductors. "The job of the railway employee," the article reads, "is in jeopardy and it has been placed therein by the act of government, state and municipal, in subsidizing every form of railway competition and in relieving the operators participating therein from paying their proportional part of the taxes, but most of all by the competitor of the railroad paying starvation wages to its employees. All over this country applications are being made to abandon short line railroads because they have become a financial drain upon the owners. Forces on existing railroads are being rapidly reduced. Crews are taken off and stations are closed. It is time for railway employees to wake up. Their jobs are gradually slipping away from them and going to men who get $20 and $25 per week and our own lawmakers are making it possible."

The article also states that the truck driver who receives the prevailing rate of $25 per week, works 11 hours regularly and overtime when necessary without any additional compensation. By estimating the overtime work as one hour per day, the writer continues, the truck driver works 72 hr. per week or at 34.7 cents per hour, while one member of a train crew receives a minimum pay of $13.96 for a 12-hour day, or $1.16 per hour. Since one person who mans a truck receives 70 per cent less pay than one member of the train crew, it cannot be disputed that low truck rates are made possible by lowering wages.

Newspaper Comment on Highway Transportation

The most far-reaching medium which is using its influence to correct abuses in highway transportation is the daily newspapers throughout the country, many of which are opposing operations on the highways in strong editorials, letters-to-the-editor and news items. Typical of the newspapers' efforts to acquaint the public with the facts regarding highway transportation is an editorial which appeared in the Kansas City Star-Times of October 16. "The highways," according to a portion of the editorial, "were built for public use and with funds supplied by the public, specifically as a rule, that large part of it owning or using motor vehicles. They were not designed, and could not have been designed without virtually prohibitive cost, for the use of a limited number of vehicles of excessive weight and dimensions. The dominating idea in building the roads was that each individual and group benefiting directly from them should be governed by the interest of all. To permit a selfish, monopolistic and dangerous use of the thoroughfares by the few is in

direct violation of the whole principle of public road construction and maintenance.

"The present situation in Missouri and, no doubt, in many other states calls for a higher degree of public protection than now is afforded. The common carriers must be made to pay to the state an amount commensurate with benefits derived from the use of the highways, while at the same time there must be enforcement of existing regulations or perhaps such additional regulations as will prevent damage to the highways and danger to the general public using them.

"Fees of the common carrier, heavier vehicles in Missouri, are notoriously low. They are, as the state survey report shows, actually negligible in comparison with the wear and tear of the roads. In the road bond proposal adopted in Missouri two years ago, the way was left open for an increase in this form of motor vehicle fees.

"The Highway Commissions of both Missouri and Kansas ought to be ready with well-considered programs for the regulation of common carriers, trucks and buses and for assessing them with their fair share of highway benefits."

The Illinois State Register, Springfield, on September 11 called attention to the "blasting of horns, the crushing of cement slabs and the brushing aside of traffic" by giant trucks as they "rumble their way through the streets and over the highways day and night with mammoth cargoes of freight."

"We echo the resentment we have heard from motorists," the editorial concluded, "urging that state authorities take cognizance of reasons why drastic action should be taken to protect the highways and the public from giant trucks with hard tires."

An editorial in the Prairie Farmer, Chicago, of September 27 is pertinent. "There has been a lot of talk about drought relief," the editor said, "but so far no one has done anything effective except the railroads. They cheerfully acceded to the President's request to reduce rates on feed and supplies shipped into the drought areas and this has been a real help. This suggests the thought that farmers have a much greater stake in the railroads than they realize. The railroads are the backbone of our transportation system and will remain so for a long time. They are none too prosperous and are struggling hard to make enough money to continue to provide adequate service. They are subject to all sorts of unfair demands and unfair competition which farmers should consider, because they, as shippers of bulky commodities, are directly involved.

"We are building a fine system of hard roads and they are a great asset. But we are letting truck companies use them, almost at will, for heavy overloaded trucks, which pound them to pieces all too soon. The trucking companies are not hauling supplies to drought-stricken farmers at reduced rates. They are not responding to public appeals in many ways that the railroads do. They pay an amount of taxes that is ridiculously small in comparison with the cost of repairing and rebuilding roads that they pound to pieces. They are taking much of the higher-priced freight away from the railroads, which means that lower-priced commodities like grain will in the long run have to pay higher rates to make up the loss.

"Truck traffic is here to stay, but it must be regulated in fairness to the public and in fairness to the railroads. Overloading must be stopped, weight limits reduced and pneumatic tires required on all trucks. Trucking companies must be made to pay a tax comparable with that paid by the railroads and adequate to pay for their use of the public highways.

"The railroads have past sins to answer for, but that bill is pretty well paid. They are the most important link between the farmer and his market and will continue to be so. The farmer has everything to gain by co-operating with the railroads in the solution of their problems, which are his problems too."

An editorial in the Daily Register Mail, Galesburg, Ill., compared the benefits which the city receives from the railroads with those which it receives from truck companies. Attention was called to the fact that the taxes paid the city treasurer for 1929 by the Chicago, Burlington & Quincy amounted to $209,353 and those of the Atchison, Topeka & Santa Fe to $53,278, while the truck companies paid only a small and nominal annual license fee. "The Burlington," the editorial continued, "has 3,500 to 4,000 employees on its payroll and this means the payment of several million dollars in wages annually. Then, at the present time, the company is engaged in pushing through a five million dollar building project and this has been the means of furnishing work for many who otherwise would have been without it. Now the outside truck company, we believe, does not employ a Galesburg person. The probability is that the driver does not even live here. The outside company is making no great improvements in the city."

Coaches and Trucks "Stealing Highways"

An editorial in the Calumet Index, Calumet, Ill., charged the motor coaches, and trucks with stealing the roads from the public. "Not only are the passenger bus and freight lines capitalizing on the public roads to their own profit," the editorial read, "but, as we see it, they are fast stealing them from the public as well. Already their traffic is a hindrance and a menace to other motorists and if it continues to grow at its present pace, it will not be many moons before all other cars will be crowded off the highways entirely.

"The solution rests with the public. In reaching it, they should not forget that the railroads build, maintain and pay taxes on their own right-of-ways and operate efficiently with comparatively little interference to the motoring public. We believe that the public roads should be preserved for the purpose for which they were intended—use by the people who pay the major portion of their cost."

The Nevada Mail and Post, Nevada, Mo., in commenting on the use of the highways said, "The enormous trucks and trailers are growing larger, wider and longer all the time until it has become dangerous for cars and farm vehicles to pass. Accidents are growing more numerous. Legislation must be invoked at once to curb them. We call upon our city council, our Chamber of Commerce, our county representative, state senator and the state highway commissioner to assist in passing laws at the coming legislature that will protect every railroad from this unfair competition and the people who use the highways."

The Carbondale (Ill.) Free Press of October 29 used exceedingly strong language in an item entitled "Miss Barrett's Death Another Truck Blame" and reflects the feeling being manifested against highway transportation. "An example of what can happen when lumbering trucks and coaches use the highway to take the place of railroads," the account read, "occurred in the form of a tragedy just west of here when Miss Lois Barrett, a Teachers' College student, was killed when a cattle truck thundered in front of a roadster, in which she was riding. Highways are public property, but there is a lot of difference between the cargo of trucks and of autos—it is pitting freight against human life and the monster haulers can crush an auto like a paper box. Ten and twelve-ton trucks and elongated coaches delay traffic, obscure vision, occupy more space for safety than an

18-ft. road allows, and there is nothing being done to keep the state highways from being made into a concrete barge line for trains of cumbersome, road-wrecking, motor-propelled brutes."

The foregoing excerpts indicate the tone and variety of comments being made by the daily press, but are only a few of the many which are being published. The magnitude of the efforts of the press is further reflected in editorials entitled "Railroad Baiters and the Future," which appeared in the Northwestern Miller and American Baker; "Rails and Merchants," which appeared in the Jefferson City (Mo.) Post-Tribune; "A Demand for Highway Protection," which appeared in the Kansas City Star-Times; "Fair Play for Railroads," which appeared in the New Franklin (Mo.) News; "Supporting the Railroads," which appeared in the Post-Tribune, Jefferson City, Mo.; "Ship by Rail," which appeared in the Moberly (Mo.) Monitor-Index; "A Problem of the Highways," which appeared in the Columbia (Mo.) Daily Tribune; "Proper Regulation and Taxation of Bus and Truck Lines Is Remedy for Railroad Crisis," which appeared in the Constitution, Atlanta, Ga.; "The Railroad View," which appeared in the Houston (Tex.) Press; and "Trucks vs Railroads," which appeared in the Kingsville (Tex.) Record.

Shippers and Public Demanding Shipments by Rail

Another very influential factor in opposition to highway transportation is found in the insistence on the part of shippers, the public and chambers of commerce, that merchandise shipped and received be carried by railroads. An example of this protective attitude appears in a resolution adopted by the Business Men's Association of Moline, Ill., East Moline and Silvis, which recommends to all merchants and business men that all freight shipping by trucks either incoming or outgoing be discouraged. Another occurred at Nevada, Mo., where merchants signed an agreement not to accept, under any circumstances, a package or case of merchandise shipped by truck, or in any other manner than by the railroads entering Nevada.

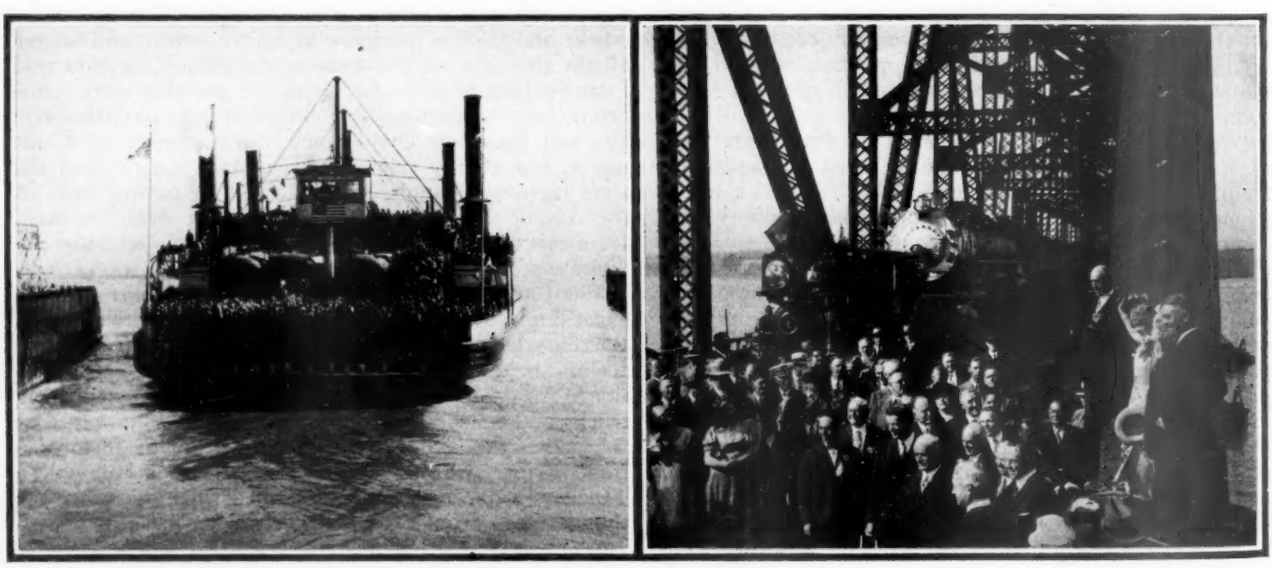
The Pittsburg (Kan.) Headlight tells of a man who sent a shipment back to the point of origin. The consignment was from Kansas City and when the truck stopped at the merchant's store in Joplin, Mo., the latter told the driver to take the goods back and ship them to him by rail.

A resolution adopted by the Chamber of Commerce of Sedalia, Mo., asked that the legislature be petitioned to pass a law regulating the size and tonnage of motor trucks and coaches so that the safety and lives of the people will be preserved and safeguarded and that an adequate tax be placed on said commercial trucks and coaches which will compensate the state for the heavy wear and tear of the highways.

The Commercial Club of Sheridan, Wyo., recently appealed to all travelers and shippers to use, for general economic reasons, the Chicago, Burlington & Quincy, the only steam railroad serving that community, instead of coaches and trucks. The Centralia (Ill.) Chamber of Commerce called a meeting for all business people who ship merchandise and supplies by freight and at this meeting it was decided to circulate a petition in which all signers agreed to ship all freight by rail. More than 200 people signed the petition.

The reactions throughout the country are well summarized in an editorial which appeared in the Vicksburg (Miss.) Herald of November 5. "We would like to see a comparison of what motor coach and truck lines are doing for the workers, manufacturers and the taxpayers. Railway lines should be looked at from a national business standpoint. They are part of the development of the country, permanently established in our business and economic life. They are of the people, for the people, by the people. The continued and natural development of our railway systems along sound business lines is desirable. It is unreasonable to believe the country can be prosperous unless the railroads are given a fair chance to develop with the country. Subsidized competition is not a problem they should be forced to solve. Competition should be on an equal basis. The building up of one business at the expense of another is never justified, but when the business injured is of national proportion it is economic folly."

* * * *



Scenes at the Dedication of the New Suisun Bay Bridge of the Southern Pacific on November 1

The train ferry Solano (left) on its last trip across Carquinez straits, carrying a passenger train between Benicia, Cal., and Port Costa. A group of Southern Pacific officers and San Francisco personages (right) at the formal christening of the new structure as the "Martinez-Benicia Bridge," with the historic locomotive "C. P. Huntington" and a modern train in the background. United States Senator Samuel M. Shortridge, standing by the bridge end post at the right, officiated at the ceremonies.

This Pumping Station at Cushing, Okla., Supplies a Pipe Line Having a Daily Capacity of 80,000 Barrels of Crude Oil

Railways Face New Competition

Gasoline pipe lines promise to become important transportation factor

UNTIL a year ago, the pipe lines of the country were devoted exclusively to the transportation of crude petroleum and natural gas. The hauling of gasoline was left to the railways, supplemented by tank motor trucks for short hauls. Now, however, a number of pipe lines for the transportation of gasoline are in various stages of construction or consideration. Since the rates that these pipe lines can quote for the carriage of gasoline are materially lower than the rail rates, it is possible that the future of gasoline transportation will parallel closely the history of the crude petroleum movement and that the amount of gasoline traffic that the new pipe lines will be able to divert from the railways will be limited only by the capacity of such pipe lines.

There is, however, a distinct difference between the loss of the gasoline traffic and the loss of the petroleum traffic. In the latter case, the railways have continued to handle about as much crude oil as they ever did, although, as the petroleum industry grew by leaps and bounds, the proportion of the total production of crude oil handled by the railways showed a rapid decrease. There was always the consolation, however, that, to take the place of the petroleum traffic that was diverted to the pipe lines, the railways were receiving a steadily increasing tonnage of gasoline. At first, the receipt of the major portion of the haul on this highly dangerous commodity was not an entirely unmixed blessing, in view of the fires and explosions which attended its transportation in the early days. However, by dint of large expenditures for research and education, the railways, with the assistance of the Bureau of Explosives, were eventually able to place the transportation of gasoline on a level of safety not materially less than that of other commodities.

It now appears that all this study and expenditure may soon prove to be in vain, for, if present indications are any criterion, the gasoline traffic threatens to leave the railways and there is no compensating traffic to take its place. New pipe lines, of course, require the transportation of considerable quantities of pipe, but this tonnage is infinitesimal in comparison with the gasoline traffic. Moreover, in the case of the gasoline pipe line that now seems farthest advanced, even this consolation traffic will be denied the railways, since an abandoned crude oil pipe line is being re-fitted for gasoline transportation.

Crude Oil Transportation

In view of the prospective similarity between the effects of pipe line transportation of crude oil and of gasoline, the history of the former development becomes highly pertinent. A number of years ago, the transportation of crude petroleum represented a considerable proportion of the total traffic handled by the railways. For the fiscal year ending June 30, 1909, for

example, crude petroleum amounted to 6,339,151 tons, of a total traffic originated of 826,492,765 tons. During the calendar year ending December 31, 1929, the railways handled 6,630,381 tons of crude petroleum of a total traffic originated of 1,337,561,723 tons. While the tonnage of crude oil was practically the same, therefore, there was a marked decrease in its ratio to total tonnage, and a similar decrease in the proportion with the total production.

In the meanwhile, the automobile industry, and with it petroleum production, was increasing enormously from year to year. The best indices of this are the statistics prepared by the United States Bureau of Mines on gasoline production and consumption. These figures are shown in the table, both production and consumption figures being given in thousands of gallons, the consumption being computed from the stocks on hand the first of each month, plus the production and imports, minus the stocks on hand at the end of the month, and minus the exports, which include shipments to non-contiguous territories.

The Railways Will Lose Much Traffic If Gasoline Pipe Lines Become Widespread

It will be observed that gasoline production increased 546 per cent, and gasoline consumption 560 per cent in the years between 1917 and 1929. Meanwhile, the railways' gasoline tonnage was keeping pace more or less closely with this increase, having risen from 20,514,897 tons in 1917 to 46,091,133 tons in 1929. Several factors tended to keep the railways from enjoying the full benefit of the increased production, among them being the relocation of refineries and the competition from tank motor trucks, the latter practically eliminating the railways as short-haul carriers of gasoline. Even so, refined petroleum represented 4.2 per cent of the carload traffic handled, and produced 5.8 per cent of the total operating revenues in 1929.

The loss of this traffic presents a far more serious problem to some roads than to others. Taking the four principal oil-carrying roads as examples, we find that, in 1929, refined petroleum represented 20.7 per cent of the total tonnage and 21.6 per cent of the total revenue on Road 1; on Road 2, the percentages were 13.4 and 17.2 respectively; Road 3, 11.8 and 11.5; and Road 4, 10.3 and 12.0.

While gasoline shipments were increasing, the transportation of crude oil by the railways was presenting an entirely different picture. Petroleum production, of course, was increasing with the growing demand for petroleum products, as portrayed by the gasoline statistics. In fact, it was increasing even more rapidly, since, in the meantime, the use of oil as fuel in place of coal was growing rapidly. What this development means to the railways in the way of lost coal traffic is another study which is outside the province of this article. While all this increased production was going on, new pipe lines were being built all over the country, and, as a result, the railways' tonnage of crude oil remained stationary.

The result of this was that, from the enviable position of handling practically the entire production of crude oil, so much ground was lost to the pipe lines that the railways became almost a negligible factor in such transportation. To them was relegated the difficult task of handling the crude oil from a new field from the time of its inception until a pipe line could be built. This involved the highly complicated and specialized handling of empty tank cars in and full tank cars out of a field, usually situated at a most inconvenient point, at a time when the railway was also deluged with cars of pipe, lumber, machinery, merchandise and all the other miscellaneous freight required for the construction of oil rigs and for supplying the population of a new oil field.

The history of these fields was always the same. While the chaotic conditions attending their inception prevailed, the railways were permitted the sometimes expensive and always bothersome privilege of handling the crude oil. Sooner or later, when these difficult problems were solved, and the railways were in position to handle the oil at some profit to themselves, the pipe line to the field would be completed and thus relieve the railways of the crude oil traffic.

Crude Oil Pipe Lines

There are now 37 companies, operating 85,796 miles of pipe lines, engaged in the transportation of crude oil, representing an investment of $741,010,196 in pipe lines, and $104,445,372 in other facilities. The individual mileages of the pipe lines owned by these companies range from 32 to 13,197 miles, and the investments from $58,920 to $103,595,571.

According to the Interstate Commerce Commission's report for 1929, the total operating revenues of pipe lines last year amounted to $251,410,920, accruing from the transportation of 1,156,350,772 barrels of oil. If this traffic had moved by rail, the revenue accruing to the railways would, of course, have been much greater, since the rates charged by the pipe lines are considerably less than the rail rates. The pipe-line operating expenses amounted to $102,101,243, leaving a net income of $142,216,242.

The size of the industry is further indicated by the fact that 23,457 employees were engaged, whose total compensation amounted to $46,251,004. The prosperity of some of these companies is interesting, in that it points to the reason for the organization of independent or subsidiary companies to build and operate further pipe lines for the transportation of gasoline. One com-

pany, operating 1,458 miles of line, handled 40,993,905 barrels of oil in 1929, with operating revenues of $6,812,993, operating expenses of $1,918,150, and a net income of $5,164,757. This company declared a dividend of 400 per cent.

Proposed Gasoline Pipe Lines

The development and present status of the pipe lines for the transportation of crude oil have been discussed in detail for the reason that it is quite within the bounds of possibility that the development of pipe lines for the transportation of gasoline will be similar, and at no very distant date. Proposals for the organization of companies to build and operate pipe lines for the transportation of gasoline are now advanced almost weekly. Some of these are rather indefinite, but, based on a study of the situation, the *Railway Age* is able to present the following, which appear to be authentic proposals, and on which construction or organization work is at present being done:

The Tuscarora Oil Company, Ltd., a subsidiary of the Standard Oil Company of New Jersey, is cleaning and re-fitting its old crude oil pipe line from Bayway, N. J., to the Ohio-Pennsylvania state line, and otherwise preparing it for the transportation of gasoline. This line is 371 miles long, and extends on almost an air line through central New Jersey and Pennsylvania to the Ohio state line near Pittsburgh. In addition, an extension of 13 miles has been laid to Midland, Pa., on the Ohio river, where a bulk plant is being built through which the gasoline will be loaded into barges for transportation by water to Ohio river points, and conceivably also, to points on the Mississippi river and its other navigable tributaries. This line will have a daily capacity of 25,000 barrels of gasoline, and will be equipped with 14 booster pumping stations at intermediate points, from which stations gasoline may be withdrawn from the pipe line, and distributed to consumers by tank truck, by barge, or by short rail hauls.

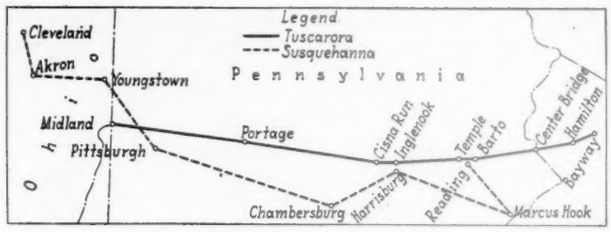
Gasoline Production and Consumption in the U. S.

Thousands of Gallons
1917—1929

Year	Production	Consumption
1917	2,850,540	2,365,146
1918	3,570,294	3,129,188
1919	3,957,870	3,434,886
1920	4,882,542	4,250,736
1921	5,153,568	4,516,050
1922	6,202,234	5,372,052
1923	7,555,945	6,685,035
1924	8,959,680	7,780,625
1925	10,886,127	9,362,094
1926	12,298,440	10,708,068
1927	13,878,270	12,465,894
1928	15,841,686	13,810,944
1929	18,238,122	15,617,784

The Susquehanna Pipe Line Company, a newly-formed subsidiary of the Sun Oil Company, awarded contracts in July covering the construction of a 500-mile gasoline pipe line from Marcus Hook, Pa., to various Pennsylvania and Ohio points. This line will have a daily capacity of 15,000 barrels. It will run from Marcus Hook to Columbia, Pa., Harrisburg, Chambersburg and Pittsburgh, and to Youngstown, Ohio, Akron and Cleveland. A branch will also be constructed to Reading, Pa., and Allentown.

The Continental Oil Company and the Barnsdall Corporation have combined to form a new company for the purpose of building and operating a gasoline pipe line, 1,218 miles long. This line will run from Okmulgee, Okla., and Ponca City, to Barnsdall, Okla., thence via Kansas City and Des Moines to Chicago, with a branch from Des Moines to St. Paul, and another branch from a point just south of Des Moines to Omaha. Surveys for the route are now being made. This project is the farthest advanced of several similar ones, and an effort is being made to interest other companies in the use of this line for gasoline transportation after it has been completed.



The Proposed Gasoline Pipe Lines in the East

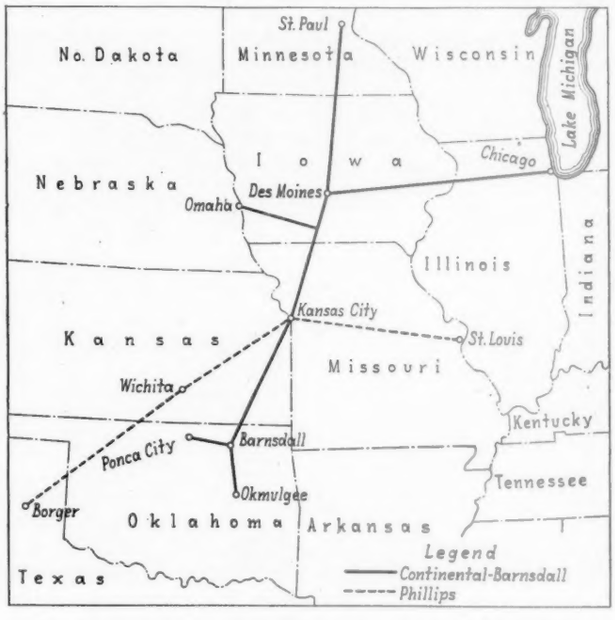
Proposals to build gasoline lines from the Mid-Continent field to the Chicago district were first brought up in 1925, following the Mid-Continent oil rate case, in deciding which the Interstate Commerce Commission authorized the railways to raise their rates to St. Louis and Chicago. The railways concerned, however, refused to take advantage of the full increase awarded by the Commission, and the agitation died down, only to be revived again this year.

The Phillips Pipe Line Company, a subsidiary of the Phillips Petroleum Company, has placed orders for 800 miles of pipe to be used in the construction of a gasoline pipe line from Borger, Texas, to St. Louis. Ten bulk stations are to be built along this line for the local distribution of gasoline. The line will extend northeast from Borger through Oklahoma, Wichita and Kansas City to St. Louis.

These projects are actualities. In addition, there are several more which seem likely to materialize, although they are at present uncertain. The four projects outlined are shown on the maps.

Comparative Rates

Examiner W. J. Harris, in a report made to the Interstate Commerce Commission in February this year, gave specific recognition to pipe-line competition as a justification for the rates on gasoline maintained by the



The Proposed Gasoline Pipe Lines in the Middle West

railways from the Mid-Continent field to St. Louis and Chicago. This is the first time such competition has been recognized as a factor in rate making for gasoline over long distances. Competitive rates on gasoline, as between the railways and the pipe lines, seem to be a hopeless proposition, since the only rates so far published for the moving of gasoline via pipe line are from one-quarter to one-half the rail rates. There seems to be no possibility that the railways can handle gasoline at such rates without loss. The Interstate Commerce Commission has so far not attempted to control rates for the transportation of crude or refined oil via pipe lines. As a matter of fact, there would be little sense in such a proceeding, since in practically every case, the pipe line is merely a subsidiary of the shipper, and any raising or lowering of the rates by the Commission would merely mean an increase or a decrease in the dividends paid by the pipe line to the parent company.

The control maintained by the Interstate Commerce Commission over the pipe lines is, in effect, theoretical rather than practical. No certificate of convenience and necessity is required for the construction of a pipe line. The Commission does get statistics from the pipe line companies as to the tonnage handled, expenses, revenues and investments, but, beyond issuing an annual report giving these statistics, there seems to be little the Commission can do in the way of exercising this nominal control.

The only rates thus far published are those of the Tuscarora Oil Company, but they are illuminating, and discouraging from the railway point of view. For example, a rate of 45 cents per barrel of 42 gallons is quoted from Bayway, N. J., to Midland, Pa., or the approximate equivalent of 16.2 cents per 100 lb. This compares with the rail rate between these points of 31 cents. When a further comparison is made with the proposed barge rate of 30 cents per 100 lb. from Midland to Cairo, Ill., with correspondingly lower rates to intermediate points, the possibilities of the situation present themselves clearly.

Moreover, these rates not only disturb the adjustment from the Atlantic seaboard to the Mississippi river, but they promise to have a much more far-reaching effect in the disturbance of marketing arrangements. The rail rate on gasoline from the Tulsa group of refineries to Midland, Pa., is 64 cents, from the Roxana, Ill., group, 37 cents, and from the Whiting, Ind., group, 30 cents.

It is true that there was an additional charge involved in piping the crude oil the greater distance to Bayway, but, even taking this into account, when these rates are compared with the rate of 16.2 cents from Bayway to Midland, it will be observed that refineries of the groups mentioned may have difficulty in meeting the competition of the New Jersey refinery in Western Pennsylvania and eastern Ohio, since this difference in rates provides an adequate margin to permit the trucking of gasoline from Midland for considerable distances in every direction.

The business of transporting gasoline via pipe lines is still in its infancy, but it is a robust infancy, and gives every prospect of an alarming growth. Just what the railways can do to avoid this prospective loss of traffic is problematical. Perhaps they can only stand by and see what happens. But at least, every railway handling gasoline should acquaint itself with the situation, whether or not it is in the present zone of direct competition, for the possibilities for expansion of these gasoline pipe lines seem endless.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended November 1 amounted to 934,640 cars, a decrease of 137,594 cars as compared with the corresponding week of last year and of 169,302 cars as compared with 1928. The decrease as compared with last year is less than it has been for many weeks, but comparisons are now being made with the period after the slump began. The peak loading in 1929 was in the week of September 27, after which loadings fell off very rapidly. Loading of grain and grain products in the week ended November 1 showed an increase of 6,074 cars as compared with last year but all other commodity classifications and all districts showed reductions as compared with both years. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, November 1, 1930

Districts	1930	1929	1928
Eastern	203,414	238,056	246,511
Allegheny	177,898	218,043	223,538
Pocahontas	56,603	64,597	63,436
Southern	133,436	148,936	160,260
Northwestern	132,195	149,142	159,047
Central Western	154,098	164,315	163,574
Southwestern	76,996	89,145	87,576
Total Western Districts	363,289	402,602	410,197
Total All Roads	934,640	1,072,234	1,103,942
Commodities			
Grain and Grain Products	44,417	38,343	52,638
Live Stock	32,403	33,897	33,959
Coal	176,011	189,016	196,354
Coke	8,848	12,150	10,856
Forest Products	38,134	59,801	66,186
Ore	35,063	45,817	48,246
Mdse. L.C.L.	240,569	271,305	267,762
Miscellaneous	359,195	421,905	427,941
November 1	934,640	1,072,234	1,103,942
October 25	959,335	1,134,360	1,162,974
October 18	931,085	1,184,564	1,163,135
October 11	954,874	1,179,540	1,190,741
October 4	972,492	1,179,947	1,187,032
Cumulative total, 44 weeks	39,911,074	45,671,671	44,032,586

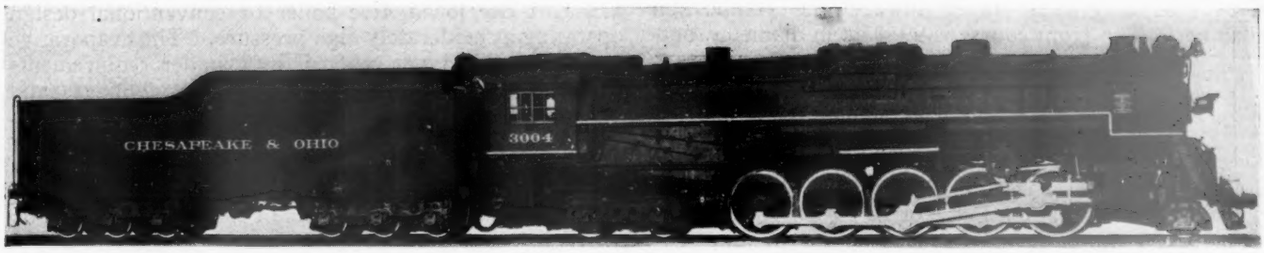
The freight car surplus for the week ended October 31 averaged 402,637 cars, an increase of 978 cars as compared with the preceding week. This included 230,705 box cars, 126,935 coal cars, 21,826 stock cars and 4,442 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended November 1 totaled 67,124 cars, a decrease from the previous week of 1,203 cars and a decrease of 5,364 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
November 1, 1930	67,124	32,795
October 25, 1930	68,327	32,265
October 18, 1930	65,157	32,302
November 2, 1929	72,488	39,157
Cumulative Totals for Canada		
November 1, 1930	2,718,769	1,472,462
November 2, 1929	3,050,258	1,816,137
November 3, 1928	3,096,221	1,737,380

THE ELECTRIFICATION OF SUBURBAN RAILWAY LINES in the vicinity of Copenhagen (Denmark) and the elimination, so far as possible, of grade crossings now existing on those lines has been provided for by new legislation, it is stated in reports to the Department of Commerce. Electrification of all the city's suburban traffic, and of the double-track line from Holte to Hillerd, is estimated to cost about 22,000,000 Danish crowns, or approximately $5,896,000. All the work will probably be done by Danish firms.



Freight Locomotive Built for the Chesapeake & Ohio by the Lima Locomotive Works

Chesapeake & Ohio Receives Large Two-Cylinder Locomotives

To replace older types in heavy freight service and to establish long runs and multiple-division operation

FORTY locomotives of the 2-10-4 type, which are the largest and most powerful two-cylinder locomotives in the world, were recently delivered by the Lima Locomotive Works, Inc., to the Chesapeake & Ohio for heavy freight service between Russell, Ky., and Toledo, Ohio. These locomotives, the first of which were completed in September, 1930, were purchased to replace older type locomotives for handling coal and ore trains on the Northern and Hocking Divisions. It is expected that the new power will considerably reduce maintenance costs, and will handle increased tonnage with reduced pusher service. Early reports of test runs indicate that expectations as to power and adaptability have been justified.

The new locomotives have an engine weight of 566,000 lb. of which 373,000 lb. is carried on the drivers. They develop a rated tractive force of 91,584 lb. which, with the addition of the tractive force provided by Franklin trailing-truck booster, gives each unit a rated tractive force at starting of 106,584 lb. The driving wheels are 69 in. in diameter and the boiler operates at a pressure of 260 lb. The cylinders are 29 in. in diameter by 34 in. stroke. The factor of adhesion is 4.07. The locomotives operate at a maximum cut-off of 80 per cent and are equipped with tandem main rods. By virtue of the large diameter driving wheels and long stroke, maximum permissible running speeds can be maintained with minimum wear on the running gear.

Boiler of Ample Proportions

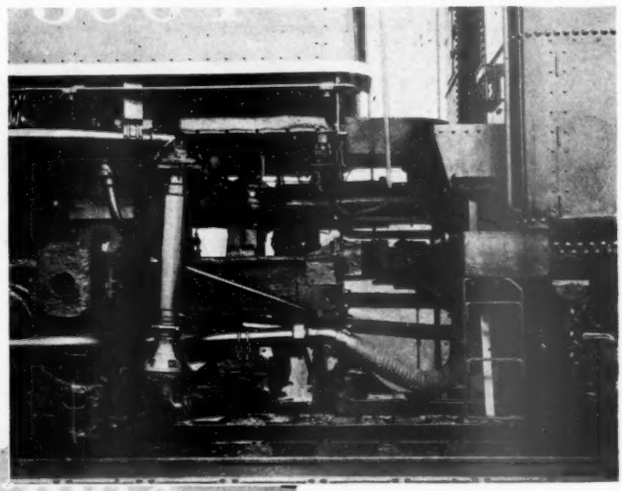
A number of interesting features have been incorporated in the design of the boiler. It is of conical de-

The Cab Is Unusually Large and Affords Plenty of Working Space for the Crew

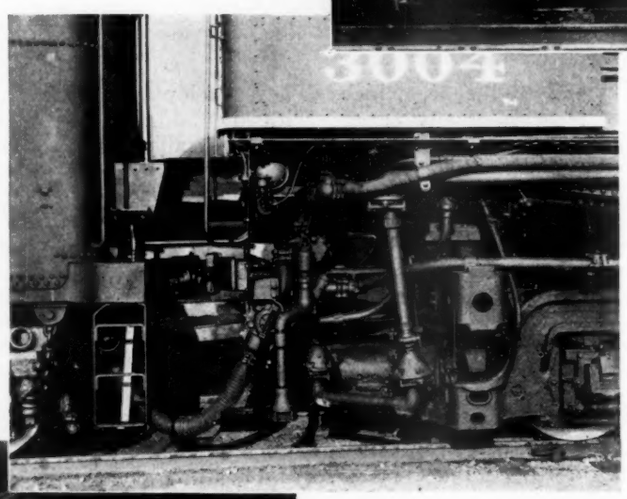
sign with a gradual taper toward the combustion chamber. The front course is 99¾ in. in diameter, outside, which increases to 108 in. at the back course. It illustrates in many respects the possibilities still to be had with the locomotive boiler of conventional design operating at moderately high pressure. The evaporative capacity is 113.1 per cent of the cylinder requirements which provides sufficient steam for the cylinders and the booster without forcing the boiler. A Type E superheater aids in obtaining maximum boiler capacity within the minimum outside diameter of the boiler shell.

Principal Dimensions and Weights of the 2-10-4 Type Locomotives for Chesapeake & Ohio

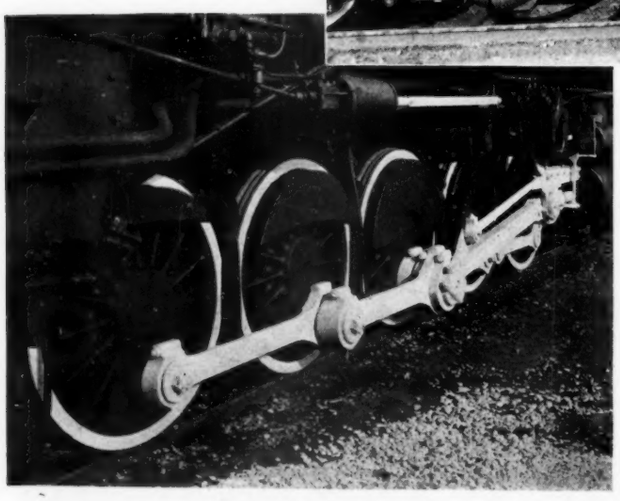
Railroad	Chesapeake & Ohio
Builder	Lima Locomotive Works
Service	Freight
Rated tractive force	91,584 lb.
Rated tractive force, including booster	106,584 lb.
Weight on drivers ÷ tractive force	4.07
Cylinders, dia. and stroke	29 in. by 34 in.
Valve gear, type	Baker
Weights in working order:	
On drivers	373,000 lb.
On front truck	61,000 lb.
On trailing truck	132,000 lb.
Total engine	566,000 lb.
Tender	415,000 lb.
Total engine and tender	981,000 lb.
Wheel bases:	
Driving	24 ft. 4 in.
Total engine	49 ft. 3 in.
Total engine and tender	99 ft. 5¾ in.
Wheels, diameter outside tires:	
Driving	69 in.
Front truck	33 in.
Trailing truck, front	36 in.
Trailing truck, rear	43 in.
Boiler:	
Steam pressure	260 lb.
Fuel, kind	Soft coal
Diameter, first ring, outside	99¾ in.
Firebox, length and width	162 in. by 108¼ in.
Tubes, number and diameter	59—2¼ in.
Flues, number and diameter	275—3½ in.
Length over tube sheets	21 ft.
Grate area	121.7 sq. ft.
Heating surfaces:	
Firebox and combustion chamber	477 sq. ft.
Syphons	168 sq. ft.
Tubes and flues	5,990 sq. ft.
Total evaporative	6,635 sq. ft.
Superheating	3,030 sq. ft.
Comb. superheat. and evaporate	9,665 sq. ft.
Tender:	
Water capacity	23,500 gallons
Fuel capacity	30 tons



The Engine and Tender Connections — Right and Left Sides



Articulated Rod Connections on the C. & O. 2-10-4 Type Locomotives



The firebox, as shown in one of the illustrations, is of unusually large dimensions. It measures 162 in. long by 108¼ in. wide and includes three Thermic Syphons. The firebox is equipped with Firebar grates to which coal is fed by a Standard modified Type B stoker, the engine of which is located on the tender.

The smokebox is of unique construction, the top front portion being offset for the Worthington, Type S-6 feedwater heater and pipe connections, and the lower portion recessed at both sides over the steam chests, to provide for the heater pipe connections and other accessories.

Nickel Steel Used to Reduce Weights

The boiler shell plates, and main-frames are made of nickel steel. The crossheads are what is generally known as the Multiple face type which makes possible a reduction in bearing pressure to 36 lb. per sq. in. within the limitations of the design. The use of these features saved approximately 306 lb. in reciprocating weights and about 3,000 lb. in the weight of the engine.

Steam is distributed to the cylinders by means of a Baker 9-in. travel gear, with piston valves 14 in. in diameter. The gear is operated by a Precision Type F, power reverse gear.

Front View Showing the Recessed Arrangement of the Smoke Box

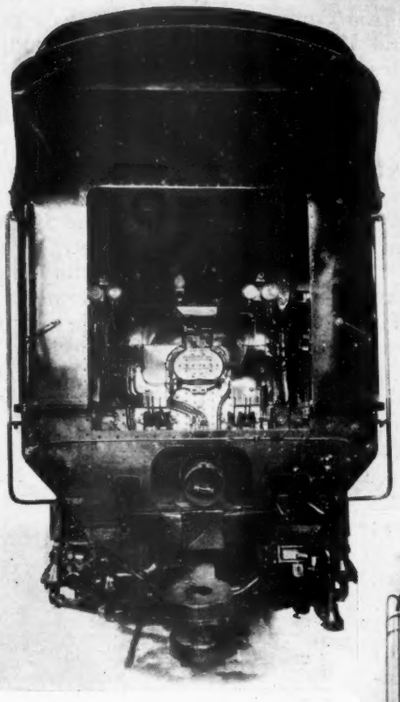
brakeman in the rear of the fireman's seat, and an additional drop seat in the rear of the engineman. Wide windows with storm sash afford clear vision ahead. The size of the cab permits an unobstructed deck and allows the seats for the enginemen to be placed sufficiently at the rear of the boiler head to afford an unobstructed view of the water column and gages.

Tender Has Large Capacity

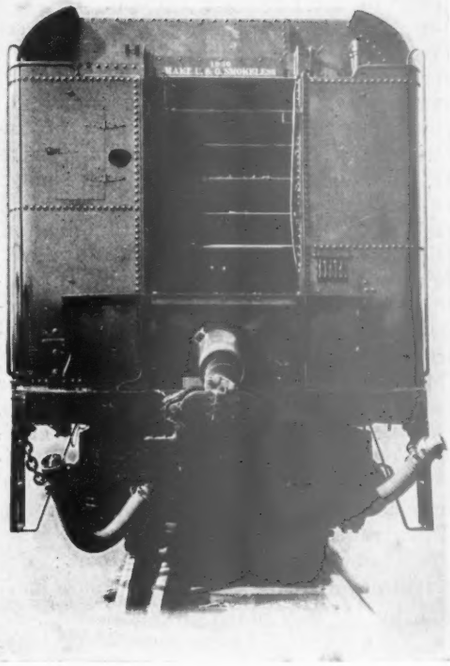
In designing the tender, the tendency to large capacity has been adhered to. The tanks for these locomotives are of the rectangular type, with General Steel Castings Corporation's cast-steel water-bottom frames, and are mounted on two six-wheel General Steel Castings Corporation's trucks with 36-in. wheels and 7-in. by 14-in. journals. A capacity of 23,500 gallons of water and 30 tons of coal assures a minimum of fuel and water stops.

The boiler jacket, outside of the cab, sand boxes, outside of the driving wheel centers and the tender are finished in black Ripolin, which gives an attractive appearance to the locomotive.

The design of the new power was developed jointly by the builders and the mechanical department of the Chesapeake & Ohio under the supervision of W. G. Black, Mechanical Assistant to the President.



Cab and Front of Tender Showing the Stoker and Drawbar Connections



The engines have articulated rods which are designed to distribute the stress evenly over all the axles. The front and rear pairs of drivers have Franklin lateral-motion boxes, designed to allow 7/8 in. lateral play on each side. The engine truck is designed to provide ample clearance for the removal of the pistons from the cylinders with the truck in place. It is of the rocker type and has outside bearings. Two of the engine trucks have Timken roller bearings. The remaining 38 are designed for the future application of roller bearings. The trailing truck is of General Steel Castings Corporation's cast-steel four-wheel Delta design. The booster is applied to the rear wheels, which are 43 in. in diameter.

In order to minimize the number of service stops required particular attention was given to the sandbox design. A single box having a capacity of 4 tons of sand is equipped with traps for the driving and the first pair of trailing wheels.

A feature in the design of the new Chesapeake & Ohio locomotives is the large and roomy cabs in which large, comfortable seats with flexible back rests are provided for the engineman and fireman. A comfortably cushioned seat is also provided for the head-end

Electrical Section Holds Second Annual Meeting

Group discusses sixteen reports and is addressed by prominent railroad and power company representatives

THE second annual meeting of the Electrical Section, Division 4 Engineering, American Railway Association, was held at the Congress Hotel in Chicago on Wednesday and Thursday, October 29 and 30. There was an attendance of between 50 and 60 at both the morning and afternoon sessions on Wednesday, and Thursday was given over to an inspection trip of the Illinois Central electrified lines and through the State Line generating plant of the Commonwealth-Edison Company. A trip was also provided by the Cleveland Union Terminal Company at Cleveland, Ohio, on Tuesday, October 28, at which time a number of members made an inspection of the electrified territory in the Cleveland Union Terminal zone.

During the sessions on Wednesday, October 29, sixteen committee reports and three addresses were presented. All of the remaining time available was utilized for a lively discussion of the reports in which a large proportion of the members took part.

The meeting was opened by the chairman S. Withington, electrical engineer, New York, New Haven & Hartford, who said that the function of the section was to correlate electrical work. He spoke of doing work rather than talking about it as a creditable attitude, but stressed the importance of obtaining recognition and of exchanging experiences by talking. Standardization he said should protect users or consumers and reduce cost of materials by simplification.

The 16 reports presented were as follows: Manual of the Electrical Section, Inductive Co-ordination, Power Supply, Electrolysis, Co-operation in Miscellaneous Regulations, Overhead Transmission Line and Catenary Construction, Collaboration on Economics of Railway Location, Standardization of Insulating Tapes, Standardization of Insulators, Protection of Oil Sidings from Danger Due to Stray Currents, Specifications for Track and Third-Rail Bonds, Illumination, Design of Indoor and Outdoor Substations, High Tension Cables, Application of Corrosion-Resisting Materials to Railroad Electrical Construction, Form for Power Contract for Large Blocks of Power.

The three addresses were as follows: The Relation of Power Companies to Railroads, by R. F. Schuchardt, chief electrical engineer, Commonwealth-Edison Company, Chicago; Some Random Thoughts for Electrical Engineers, by J. A. Droege, vice-president and general manager, New York, New Haven & Hartford, New Haven, Conn.; The Electrification of the Cleveland Union Terminal, by H. A. Currie, electrical engineer, New York Central Lines, New York City.

A summary, including features of the more extensive reports, is included in the following:

Power Supply

A study has been made of (a) steam power available for traction and general power purposes, (b) water power available for traction and general power purposes, and (c) internal combustion engine power supply.

A total of 84 railroads replied to a questionnaire sent out by the committee and the answers received show that out of a total of approximately 3,000,000,000 kw. hr. purchased and produced during 1929, 58.1 per cent was purchased, 39.46 per cent was produced in railroad owned stationary power plants, .06 per cent was produced by self-propelled locomotives and 2.38 per cent by self-propelled cars. Electric energy used for traction purposes on the 84 railroads was 1,676,130,559 kw. hr., or 56.93 per cent of the total railroad requirements.

Public utility steam power plants have shown remarkable improvements in efficiency during the past 13 years. The average consumption of fuel has, due to increased efficiency, declined from 3.2 lb. of coal per kilowatt hour in 1919 to 1.69 lb. in 1929, or nearly 50 per cent. It is now possible to obtain thermal efficiencies of better than 31 per cent. With 14,500 B.t.u. coal this is equal to 0.76 lb. of coal per kilowatt hour. At the present time electrical power for railroad purposes may, in most cases, be

Electrical Section Inspection Party at the Commonwealth Edison's Brookdale Sub Suburban Electrifi

more economically purchased than produced by the railroads themselves in their own generating plants.

Many smaller steam plants are still in operation on various railroads for furnishing electric power to shops and large terminals. The necessity for steam for heating and process work frequently makes such small isolated plants economical to operate, the power being a partial by-product. The variation of seasonal demands and the daily diversity of the steam and electric power requirements may make even such plants of doubtful economy, especially when major replacements are due in the face of the present low cost of purchased electric power. Nevertheless, the recent improvements in mixed pressure turbines and in boiler and furnace design give very attractive water rates even with the smaller size units, and when steam is required for heating, pumps and other process work, definite economies may result from their use in such isolated plants.

Figures obtained by the Canadian Government in 1927 show that 98.6 per cent of the electric power used was developed by hydro-electric plants and 1.4 per cent by fuel burning plants.

The data received in response to the committee's questionnaire shows that 80.31 per cent of electric energy used by railroads in the United States is produced by steam generation, 22.94 per cent by water power and 3.75 per cent by internal combustion engines.

Discussion.—C. G. Winslow, assistant electrical engineer, Michigan Central, said it would be desirable to know how the cost of power production has varied in addition to knowing how the coal rate has been reduced. G. I. Wright, engineer, electric traction, Reading Company, stated that cost of power production as well as coal consumption has been reduced. W. L. Morse, special assistant engineer, New York Central, suggested that it would be desirable to obtain information on the sea temperature power plant which is now being experimented with. J. S. Hagan, electrical engineer, Central Railroad of New Jersey, pointed out that exhibit D in the report does not represent plants which supply power for railroad electrification and suggested that information was needed concerning coal consumption of plants supplying this power. H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, said the average investment in steam power plants is now about twice what it was before the war. Fixed charges, he said, cover demand charges and provide increased efficiencies. In his opinion, reduction in cost of making power has more than offset the increase in capital cost. More study, he said, is desirable. R. G. Gage, chief electrical engineer, Canadian National Railways, commented on internal combustion engines, saying that the Canadian National had seen fit to extend the use of this type of power and in his opinion it is here to stay and should receive the active attention of the section.

Concerning power contracts, Mr. Wright said that recently made contracts have passed a part of the saving on to the railroads. These contracts, he said, have been made on a cost basis so that power companies will not make less profit at the beginning of the term than at the end. G. W. Bebout, electrical engineer, Chesapeake & Ohio, stated that the cost plus method was satisfactory for large electrification projects but is not always equally suitable for smaller applications. It may be necessary, he said, to pay a high demand charge over periods of depression. L. C. Winship, electrical engineer, Boston & Maine, said that his railroad has avoided continuation of demand charges over extended periods by suitable contract clauses.

Electrolysis and Overhead Construction

The committee on electrolysis has studied particularly measures taken to mitigate electrolysis in connection with the Cleveland Union Terminal and the Delaware, Lackawanna & Western electrifications. Stray currents were found present on the Cleveland Terminal electrification and bonding and drainage cables were used to mitigate such stray currents and prevent damage by electrolysis. After complete electric operation has begun a resurvey will be made to determine if any other mitigative measures are necessary. Routine periodic surveys will be made and electrolytic conditions will be kept continually under observation.

Operation has not been sufficiently extended or in effect long enough on the Delaware, Lackawanna & Western to warrant a report.

The activities of the committee on overhead construction have been confined largely to the consideration of detail specifications covering component parts of catenary construction to supplement the main specifications. In an endeavor to develop specifications covering copper and bronze trolley wire, which will adequately meet the requirements of the railroads, at the same time being as closely in accord as practical with standards already established by other associations and societies, the committee has considered specifications for these types of wire jointly developed by the American Society for Testing Materials and the American Electric Railway Engineering Association.

In the opinion of the committee the specifications adopted by these bodies, amplified to cover the corrosive qualities of the wire and in certain other respects, will substantially meet the requirements of the railroads.

Discussion.—R. P. Winton, catenary engineer, Norfolk & Western, asked that a twist test for trolley wire be incorporated in the specifications and that the American Society for Testing Materials be requested to revise its specifications to incorporate this feature. Mr. Winton's suggestions were en-

...station; One of the Seven Substations Which Supplies Power to the Illinois Central ...cation in Chicago

dorsed by H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, who said that railroad requirements were of necessity somewhat higher than the requirements of the electric railways by which the specifications were originated. Steam railroad requirements, he said, require a higher factor of safety. W. M. Vandersluis, general superintendent, telegraph and signals, Illinois Central, stated that packing clauses in the specifications do not cover the manner in which trolley wire is wound on the reel. The wire, he said, should be wound with the normal axis at right angles to the axis of the reel to facilitate stringing. K. H. Gordon, foreman, electrical department, Pennsylvania Railroad, replied that the committee had considered this point but that there was no uniformity of opinion as to what method should be used and that for this reason the individual order should govern this point.

Standardization of Insulating Tapes

The committee on insulating tapes has prepared detailed specifications for varnished cloth tape. These cover material, finish, mechanical strength, dielectric strength, etc. The work of the committee has been correlated with that of other organizations and it is recommended by the committee that the specifications be accepted as recommended practice and published in the manual.

Standardization of Insulators

No changes in insulator specifications have been recommended this year, but the following is offered as information: A number of Steatit suspension insulators of the type used on the German State Railways electrification have been furnished different American railroads for trial in their electrified territory. These insulators have a dry flashover of 114 kv. and a guaranteed mechanical strength of 10,600 lb. Pin type insulators of boro-silicate glass are now being manufactured for 70 kv. service.

So-called "fog-type" insulators are now regularly furnished by at least three of the leading American insulator manufacturers.

Protection of Oil Sidings From Danger Due to Stray Currents

The committee on protection of oil sidings offers as recommended practice a set of revised rules for the protection of tracks used in the loading or unloading of inflammable liquids from danger of fire caused by electric sparks. This involves requirements for all loading or unloading tracks, also requirements for all loading or unloading tracks not electrically equipped where stray electric currents exist and special requirements for side tracks electrically equipped.

Discussion.—L. C. Winship, electrical engineer, Boston & Maine, said that detailed rules for such protection are not needed in the report of the committee, as such details have been prepared by a number of oil companies and railroads; if any variation of detail is felt necessary, the railroad should take the responsibility of the variation. No attempt, Mr. Winship said, should be made to define what a stray current is, the work of the committee being based on the expectation that details can be supplied by the railroads. The manner in which the conclusions of the committee were reached was explained by W. L. Morse, special assistant engineer, New York Central, who related the history of work done by associations on this subject.

P. H. Hatch, assistant engineer, New York, New Haven & Hartford, suggested that the filling of internal combustion equipment used on rolling stock should be considered by the committee as well as the filling of wayside tanks. W. H. Stilwell, signal engineer, Louisville & Nashville, referred to the fact that the only definite specification made in the report concerns size of wire and stated that in his opinion it was not necessary to designate this size. Mr. Morse replied that if smaller wire is used it might provide means, in case of fire, for blaming the railroads.

Mr. Winship added that the Petroleum Institute has agreed to the size of wire specified. He also said that specifications should be extended to include highway buses and spoke of the necessity for keeping the filling hose in contact with the tank during the filling operation to avoid spark. R. P. Winton, catenary engineer, Norfolk & Western, told of a fire caused recently by a ground in the power company's system in which case bonds were not used on sidings. He stated that it was not possible to determine when stray currents may exist. D. J. Brumley, chief engineer, Chicago Terminal Improvements, Illinois Central, asked if the Electrical Section Committee were in agreement with the Petroleum Institute. Mr. Winship replied that the committee has worked with the Petroleum Institute and the Bureau of Explosives. G. W. Bebout, electrical engineer, Chesapeake & Ohio, explained that the friction of gasoline passing through a hose will cause the generation of static electricity and that this is the reason why the nozzle should always be connected electrically with the container.

Specifications for Track and Third Rail Bonds

A study has been made of details of bond design with a view to developing specifications covering the different classes of bonds. A specification for stub terminal copper rail bonds has been prepared jointly by the electrical Section Committee and Sub-Committee 2, Heavy Electric Traction, A. E. R. E. A. co-operating with manufacturers, and is presented as information with the view to recommending that the specification be adopted as standard next year.

A study has also been made of methods of joining third rails to provide electrical conductivity, such as welding, combination of copper bar, bolts and solder and similar practices. Investigation has concerned principally the practice of joining third rails by welding. Three metropolitan railroads have made experimental installations of welding joints of different types and have in two instances carried their investigations with respect to results and cost to the conclusion that the bolted joint with soldered splice bars is preferable because of the lower cost. The third road, while reporting that the welded joints have been thus far satisfactory to conductivity and maintenance, has taken no definite action as to the continuation of this method.

Tests to determine the specific resistance of the various types of welding rods used with welded bonds were conducted by manufacturers with the view of applying this information in determining the proper cross-sectional area of metal in the weld. The tests show that the specific resistance of the deposited welding metal is so low that the resistance through the weld is negligible for any practicable type of welded bond. The contact area is determined by mechanical considerations rather than resistance. There are so many types of welded bonds in use on different types of joints that the committee deems it not advisable to attempt to standardize on the dimensions of the terminals, at least until it is possible to standardize on types of welded bonds.

Illumination

The report of the committee on illumination is one of the longest reports presented to the section. It is essentially the same as the report presented to the Association of Railway Electrical Engineers and reported in the *Rail-*

way Age of November 1. It is the only overlapping subject with which the two associations are concerned and the one report is presented to both groups.

Discussion.—G. W. Bebout, electrical engineer, Chesapeake & Ohio, said that more lamps are included on the schedule than are needed and recommended the omission of the 40 and 60-watt lamps to provide for a reduction of the lamps carried in stock by the railroads. S. D. Kutner, assistant engineer, New York Central, stated that lower wattages are needed for certain applications and said that if they are not standard, the railroads which want the 40 and 60-watt sizes would have to pay an excessive cost for these sizes. C. R. Sugg, electrical engineer, Atlantic Coast Line, agreed with Mr. Bebout and recommended a reduction of the number of lamps in the specifications. J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy, agreed with Mr. Bebout that many roads do not use all sizes but was of the opinion that they should be retained on the schedule. Mr. Bebout concluded the discussion on illumination with comments concerning the height of floodlighting towers. In this connection he stated that fog frequently renders the very high towers ineffective.

Design of Indoor and Outdoor Substations

Substation insulation should be somewhat better than line insulation so that surges due to lightning or switching, most of which originate upon the transmission line itself, should flash over line insulators rather than insulation of substation equipment. This problem is of special importance in railroad work since it is common practice to use line insulators of higher flashover values than would be used by public utility companies for the same transmission voltages, these higher values to take care of unusually severe conditions such as smoke, tunnel construction, grounded circuits, etc.

To make substation insulation still greater than such line insulation would establish very large insulators for bus supports, disconnecting switches, transformer and circuit breaker bushings, etc., which, while possibly not prohibitive in cost, are apt to be considered impractical sizes.

One means of avoiding such excessive sizes is to "grade" the line insulation adjacent to substations; that is, to use a smaller number of suspension units in a string, or to add grading rings, or both, which will discharge line surges at substation locations. It is then permissible to select substation insulation slightly exceeding only the graded line insulation rather than the normal line insulation. If the substation design is such that through duplication of buses or equipment the associated insulators may be occasionally cleaned, it may be considered reasonable to match up the high voltage substation insulation connected to transmission lines which are independent of grounded traction circuits, with a value of line insulation corresponding to the normal insulator rating less allowance for dirty conditions. For example, the substation insulation might be matched with the normal line insulation before the addition of the factors for smoke and stream operation referred to above. A practicable size of insulator may thus be used and still keep it consistent with the line insulation.

The working clearance required around apparatus to permit repairs in place depends upon the type of equipment, but the committee feels that the minimum distance should be not less than four feet to a live high voltage conductor.

Discussion.—R. P. Winton, catenary engineer, Norfolk & Western, said his own experience has been that all kinds of insulators are used in substations and that there is great need for using standard insulators. H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, said that during the past few years there has been a notable tendency to use units in outdoor substations which can be separated from the remainder of the apparatus. G. W. Bebout, electrical engineer, Chesapeake & Ohio, made the practical suggestion that either manufacturers or railroads should design apparatus so that terminals are easily accessible for tightening.

Application of Corrosion Resisting Materials to Railroad Electrical Construction

One hundred and twelve samples for corrosion tests were installed in a smoke jack at Cedar Hill roundhouse, New Haven, Conn., on June 3, 1930. These samples are made of various metals and include round bars, trolley clips, carriage bolts, trolley wire and stranded cable. The samples were weighed before installation in the smoke jack and will be weighed when removed. The results of the test in the smoke jack will be available next year. Samples will be installed in Hemphill tunnel and at Lambert's Point Pier on the Norfolk & Western in the near future.

Discussion.—P. H. Hatch, assistant engineer, New York, New Haven & Hartford, inquired if an attempt had been made to analyze the coals which supplied the corrosive gas to the materials on test. R. P. Winton, catenary engineer, Norfolk & Western, replied that in the opinion of his committee, this was not important as conditions are the same for all samples. K. H. Gordon, foreman, electrical department, Pennsylvania Railroad, stated that many of the samples included come under the category of stainless steels and said that with these steels in contact with copper considerable corrosion due to electrolytic action may result. Mr. Winton explained that the test samples have holes drilled in them and are hung on copper wires while the trolley clips are placed on wires as under service conditions.

R. G. Gage, chief electrical engineer, Canadian National, inquired if these tests will make tests by individual roads unnecessary. Mr. Winton replied that these tests are being carried on primarily for the purpose of weeding out materials that are obviously unfit. More tests, he said, should follow and analysis of coal used may be desirable for inclusion with future tests. H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, offered the added information that the test samples are mounted on non-corrosive supports, that there was a locomotive under the jack nearly all the time and that there is no cover on the jack so that rain can get at the samples. Manufacturers, he said, have conducted similar tests over a period of five years, but it was felt that the association should also make its own tests. A comparison of tests, he said, should help to determine if the kind of coal used is important.

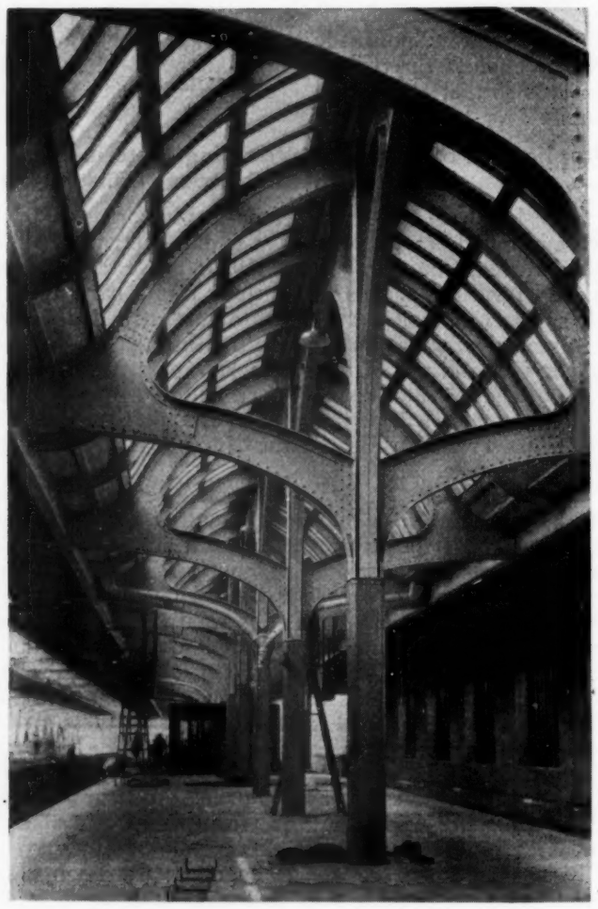
Power Companies and Railroads

The address on the relation of power companies to railroads by R. F. Schuchardt was inspirational and suggested that the power companies and railroads have much of common interest. Electricity, he said, entered railroad service 85 years ago and has now been extended through all branches. Twenty-one railroads, he said, now have some mileage electrified and he quoted Britton I. Budd, Public Service Company of Northern Illinois, as saying "We have direct current and alternating current electrification and power companies should supply either to the railroads at the lowest possible cost." The power companies, Mr. Schuchardt said, can best serve the railroads by supplying the particular kind of power

(Continued on page 1038)

Large Suburban Terminal Opened in Philadelphia

New facilities in heart of city are underground and fully electrified—Part of extensive improvement project



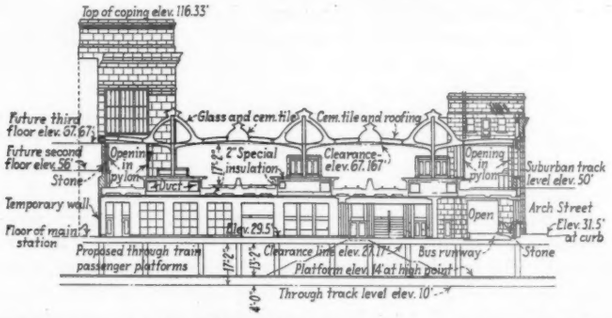
A Section of the Shed, Constructed of Steel and Glazed Cement Tile, Over the Platforms and Tracks at the West Philadelphia Station

ON September 28, the Pennsylvania placed in service in the business center of Philadelphia, a fully electrified underground suburban passenger terminal, which exceeds in size and scope any similar facility in the country. Linked with this, it placed in service a new suburban station in West Philadelphia, which will become a part of a new modern through passenger station which the Pennsylvania is planning to build on the west bank of the Schuylkill river to replace its present Broad Street station in the center of the city. The completion of the new suburban facilities forms the first major step in the improvement of passenger facilities in the city, which is part of an extensive general improvement program designed to be completed late in 1933. An outline of this program of improvements and its status up to September of this year was published in the *Railway Age* for August 30.

Large Office Building Over Station

The new mid-town suburban passenger terminal, which accommodates all of the railroad's suburban service into and out of Philadelphia, involving the handling of 50,000 commuters and the movement of 325 trains daily, is located immediately north and west of the Pennsylvania's present Broad Street station, beneath and beyond the limits of the Pennsylvania's new Broad Street Station building, a structure 397 ft. long by 108 ft. wide and 22 stories high, which was completed and opened to office occupancy on April 1. The new station building fronts on Sixteenth street and a new boulevard, 90 ft. wide, known as Pennsylvania Boulevard, which will extend eventually to West Philadelphia and terminate in a broad plaza in front of the main passenger station, which is to be constructed at that point.

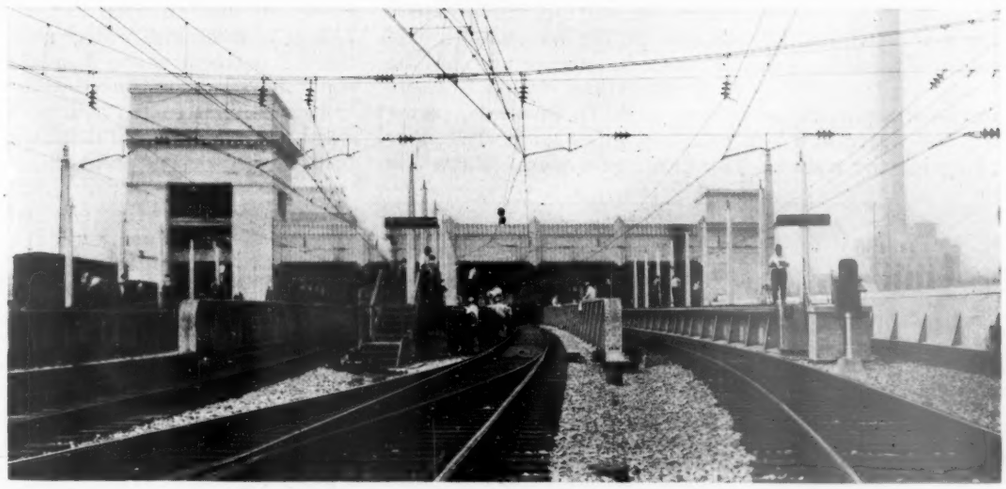
The new Broad Street Suburban terminal, which embodies in its construction and facilities the latest and most improved features devised for this type of rail terminal, occupies principally a mezzanine floor, 15 ft. below the street level, and a track level, with platforms which are about 14 ft. below the mezzanine. These two levels extend from 150 ft. west of Fifteenth street to Eighteenth street, and from the south line of Pennsylvania boulevard to the north line of Cuthbert street, as indicated in the accompanying general layout plan of the new facilities. Over all, the station facilities cover an area about 1,000 ft. long by 200 ft. wide, much in excess of the area occupied by the Broad Street Station building above it. On its north and south sides and its east end, the terminal area extends under paved streets, while on its west end it is covered over temporarily, forming a site which will be occupied later by developed air rights.



Transverse Section Through the Suburban Station Facilities at West Philadelphia

Layout of Floors

On the mezzanine floor of the terminal, which is similar in construction to that of the Hudson Terminal



The New Suburban Station at West Philadelphia, Which is to Become a Part of the New Through Station Planned at that Point

in lower New York, but considerably larger, are located the main station concourse, waiting rooms, ticket offices, an information desk and all of the auxiliary facilities usually provided at large stations for the convenience of passengers, including a barber shop, telephone and telegraph offices, rest and toilet rooms and stores and other concessions. A large restaurant is also being provided. This level of the station has terrazzo flooring, Botticino marble side walls, bronze trim and a plastered ceiling, painted to harmonize with the marble-finished walls.

Illumination of the mezzanine floor is effected by means of artistic, specially designed ceiling lighting fixtures, which are mounted in the center of circular grilled outlets of a forced ventilating system, designed to change the air throughout the entire station every 20 minutes. The heating system at the station is combined with the ventilating system, whereby pre-heated air can be supplied to the ventilators for rapid circulation. Utilizing this method of heating precludes the use of direct heating radiators or other devices occupying floor space in the general concourse areas.

Looking East into the Subway Approach to the New Broad Street Suburban Terminal. The Broad Street Station Building Over the Terminal is Shown in the Center Background

The track level of the station at the present time is laid out with four island platforms, each 1,134 ft. long and 24 ft. wide, and seven stub station tracks. Final plans call for two additional tracks along the south side of the present layout, to be provided when space is made available by wrecking existing facilities that are to be abandoned, and ultimate plans provide for three more tracks and two platforms along the south side, which will be constructed, however, only when service demands require. The mezzanine floor will also be extended to the south as tracks are added, and with the provisions for expansion, it is estimated that the new terminal will be able to meet all demands of increased traffic brought upon it for at least 35 years.

The platforms, which are at car-floor height and spaced 48 ft. center to center, are of concrete construction, with a Kalman wearing surface, and are provided with working chambers beneath. The walls at the track level are painted green, while the ceiling is painted a light green tint.

One of the outstanding features of the new terminal is the numerous means of entrance and exit provided to expedite the movement of passengers to and from the station. Each track platform is served by four broad stairways and an electric passenger elevator to the mezzanine floor, and two large elevators and 12 entrances and exits lead from the mezzanine to the street level.

These latter exits and entrances include long wide ramps on easy grades leading from the east ends of the mezzanine and track levels to the City Hall station of the Broad Street subway and beyond, and to the old Broad Street passenger station. All stairways to and from the street level, the mezzanine and the platform level are paved with Norton non-slip abrasive tile.

Foundations and Drainage Presented Problems

Two of the most interesting engineering problems in connection with the construction of the new suburban terminal were the prevention of vibration within the Broad Street Station office building, and provision to take care of ground water seepage into the track level. This latter problem was unusually complicated as the track level at the terminal is about five feet below high water in the Schuylkill river, and under about a

15-ft. head of ground water. In solving this problem, the tracks within the terminal proper and west to between Twentieth and Twenty-first streets are laid on heavy contrete slabs, with transverse drains of 5-in. terra-cotta pipe beneath them at 40-ft. intervals, carrying the water to 12-in. cast-iron pipes laid between or alongside the tracks. The drainage system as a whole leads to a sump near Eighteenth street, from which the water is pumped into the city' drainage system.

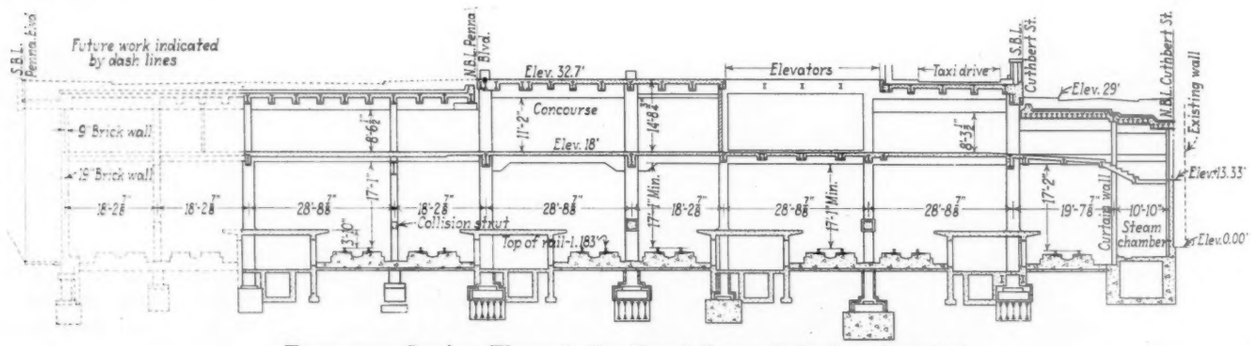
Within the Subway Approach to the Terminal Showing Two of the Approach Tracks

In solving the problem of vibration within the office building, caused not alone by the movements of trains, but by traffic on the structurally supported streets about the building, all footings for the street structures and the track slabs were constructed entirely independent of the building footings. Furthermore, all of the street structures themselves are separated from the office building by air gap expansion joints. As a further precaution against vibration being transmitted to the building, all of the building column bases rest on vibration pads, consisting of two thicknesses of 1/8-in. lead, two 3/8-in. asbestos boards and one thickness of No. 20-gage sheet steel.

Suburban Facilities at West Philadelphia

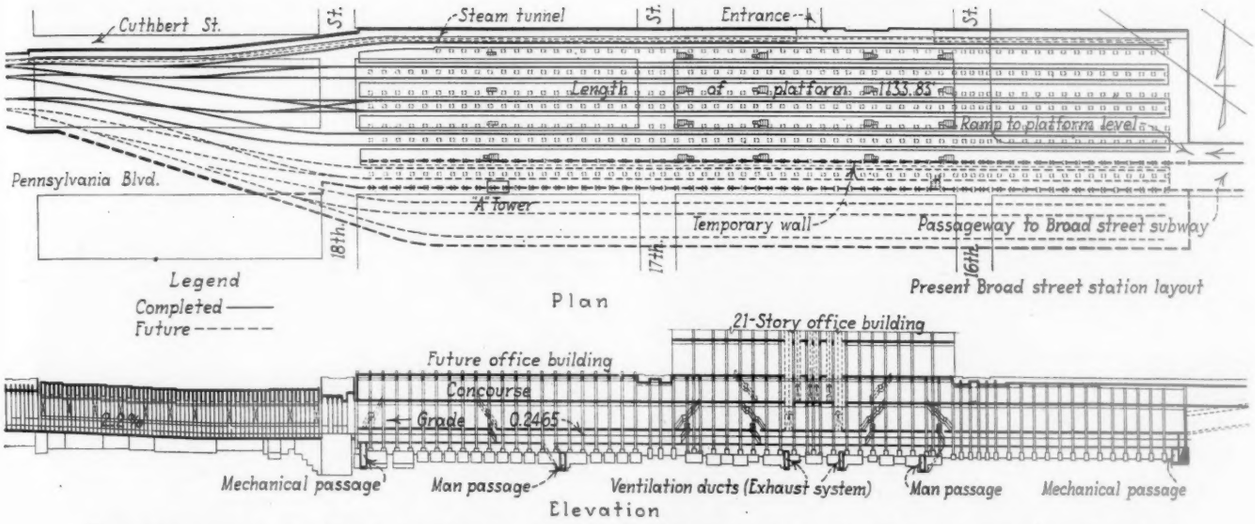
The seven tracks at present at the Broad street underground suburban terminal, which are practically on a level grade, converge into four tracks immediately west of the station and then continue westward on a 2.2 per cent ascending grade through a covered subway to a point just west of Twentieth street. Here they come out into an open cut, enclosed on both sides by concrete retaining walls, and continue westward on the 2.2 per cent grade to a new four-track reinforced-concrete, sandstone-faced arch bridge over the Schuylkill river, constructed as a part of the general improvement project. Special details in the construction of this bridge were described in the *Railway Age* for December 7, 1929. Immediately west of the river, which is crossed at an elevation of about 50 ft. above high water, the four tracks are expanded into six tracks and enter the suburban section of the proposed new main Philadelphia passenger station which has been constructed coincident with the new Broad street suburban terminal.

This suburban station, which for the present is called the Thirtieth Street station, will form a part of the most northerly wing of the main station, and has been constructed to accommodate passengers using the electric suburban trains passing through West Philadelphia on their way to and from the downtown station. The station, which will continue to be operated as the suburban unit of the new through passenger station when that station is completed, consists principally of three intermediate platforms, about 1,100 ft. long and about 18 ft. above the street level, and six station tracks. Each of the platforms is equipped with four sets of stairs, an elevator and an escalator, which lead down to wide passageways at each end of the station proper, extending at right angles to the tracks. Only the more westerly sets of stairs and the west end passageway are in service at the present time, this passageway leading to a temporary ticket office, waiting room and other station facilities provided under the tracks and platforms west of the station building line. When the main passenger station is completed immediately adjacent to the present suburban facilities, all of these auxiliary station facilities will be combined with those in the main station proper, and the temporary facilities now in service will be removed to provide space for a taxicab stand. At that time also, both of the passageways under the suburban tracks will have ramps or stairs leading to a concourse directly under the main body of the elevated suburban tracks, which will open out into the main concourse of the main station on the same level.



Transverse Section Through the Broad Street Suburban Terminal

At the present time, passengers can reach the Thirtieth Street station from Market street over a tem-



General Layout at the Track Level and a Longitudinal Section of the Broad Street Suburban Terminal

porary highway built on the present line of Thirtieth street, and a passageway has been provided connecting the new station with the present West Philadelphia station of the Pennsylvania, still used by steam trains.

A special feature of the West Philadelphia suburban unit is the unusual type of glazed cement tile shed provided over the tracks and platfroms. This shed, which was designed specially to enhance the appearance of the station and to give increased light on the platforms, is an adaptation of the Bush shed principle but with an umbrella-shaped top over the platforms and without smoke ducts over the tracks.

Future Work to be Pushed

With the opening of the Broad Street suburban terminal, all suburban train operations were transferred from the present Broad Street station to the new facilities, except for a few movements during the morning rush hours. This shift of operations made it possible to start the removal of considerable of the present trackage just west of the Schuylkill river, opening the way for actual construction work on the new main station in West Philadelphia.

Steam trains, which will continue to operate in and out of the old Broad Street station, will, during the construction period, use the new suburban tracks from the new Thirtieth Street station to a point just east of the new suburban track bridge over the Schuylkill river, where temporary connections have been made with the old tracks leading to the old station. Routing the steam trains into the old Broad Street station in this manner made it possible to start the removal of the old bridges over the river, and the tracks west of the river now connecting the old Broad Street station with the present old West Philadelphia station. It is expected that work on the main station in West Philadelphia will be begun early next spring and will be completed late in 1933, at which time the use of the old Broad Street station will be discontinued and the present embankment approach to the old station will be cut away to the level of Market street to provide for future buildings.

All of the work described in this article is being carried out under the direction of Robert Farnham, chief engineer, Philadelphia improvements, assisted by S. H. Noyes, assistant to the chief engineer, Philadelphia improvements, and T. P. Watson, principal assistant engineer. The Keystone State Corporation, Philadelphia, was the principal contractor on the work east of the Schuylkill river, while most of the work west of the river was done by the United Engineers & Constructors, Inc., Philadelphia.

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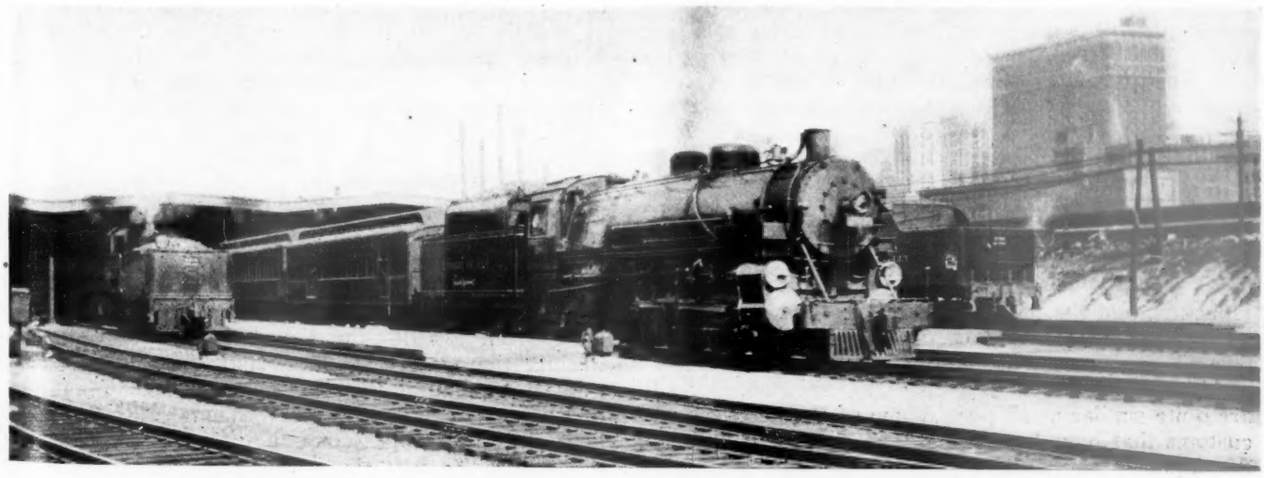

The Lehigh Valley's "Black Diamond" Ready to Leave Its Buffalo, N. Y., Terminal

A 15-car Silk Train on The C., M., St. P. & P.

Handling Silk in Trainload Lots

Revenue derived from handling raw material from west to east is over six million dollars

THE magnitude of the raw silk movement across the country is indicated by the fact that in 1929, over 500,000 bales or more than $325,000,000 worth of silk unloaded at four west coast ports was transported by railroads to eastern points for manufacturing. Furthermore, the railroads which participated in the transportation of the silk received over $6,000,000 in revenue. Because of the great value of the shipments, dispatch is a factor and a cargo is usually unloaded from the boat, placed on trains and started across the continent within three to four hours after the boat docks. In 1929, nine steamship companies carried the silk from China, Japan and India to the west coast ports, while over 20 railroads participated in the movement from the west to the east.

The west coast ports at which silk-carrying ships dock are Vancouver, B. C., Seattle, Wash., Portland, Ore., and San Francisco, Cal., and the number of bales received in 1929 was 133,796 at Vancouver, 231,548 at Seattle, 10,438 at Portland and 144,213 at San Francisco. The point of destination is usually New York, Hoboken, and the territory thereabouts, although there is usually some for Chicago, Indianapolis, Ind., and beyond.

Although the methods of handling shipments of silk are quite similar at all ports, some of the practices and customs that have been established coincident with the development of the transportation of silk at Seattle make this port an interesting example.

When a cargo of silk leaves a foreign port, the destination port is notified and kept informed of the progress of the vessel so that all agencies that are to take part in the rail movement can prepare. Competition among the railroads soliciting this business is keen because of the revenue derived from the handling of this commodity and because of the spirit of contest which this expedited service has developed among the employees on each railroad, yet certain traffic alliances that were established years ago determine the routing of the shipments over the railroads. If the cargo arrives at Seattle on one of the ships of the Osaka Shosen Kaisha, the Chicago, Milwaukee, St. Paul & Pacific will carry the merchandise east. This is a result of arrangements that were established in the early days of silk transportation. Likewise, the business of the Nippon Yusen Kaisha is always given to the Great Northern as a result of the activities of James Hill in placing these companies on friendly terms 34 years ago. The business of the American Mail Line, the Kawasaki, Kisen Kabushiki Kaisha, the Mitsubishi Shoji Kaisha and the Mitsui Bussan Kaisha, which totaled 95,892 bales in 1929, is distributed among all lines operating from Seattle—the Union Pacific, the Northern Pacific, the Great Northern and the Chicago, Milwaukee, St. Paul & Pacific. The intermediate and destination carriers have no agreements with the ocean lines and any business that they receive is a result of solicitation and past performance.

When a steamer leaves Yokohoma, the steamship company cables its representative in Seattle, advising

the number of bales and tons of silk in the cargo. When the steamer gets within radio distance, the captain of the ship sends a radiogram to the port captain of the steamship company advising him of the approximate time the steamer will reach William's Head, which is the Canadian entrance to Puget Sound, and about 30 miles off Victoria, where all steamers are held for medical inspection. In this radio is also conveyed the information as to how the silk is stowed in the ship—whether in one, two, three or four hatches. From this information, preparations are made for the handling of the silk on its arrival at the Seattle dock.

Customs Arrangements

When the steamer docks at Victoria, B. C., a representative of the railroad, known as the customs agent, boards the steamer, and while she is in transit to Seattle, he prepares the necessary papers for the filing of the customs entries. On raw silk, there being no duty, it is a part of the tariff provision that the railway company must make the consumption entry, and in order to expedite the handling, the railroad arranges for a customs officer to be at the dock when the ship arrives after custom house hours. When she arrives during custom house hours, the customs agent must go to the custom

The Cargo of Silk Is Unloaded As Soon As the Ship Docks

house and file his entry. On silk goods an "Immediate Transportation" entry must be filed for the reason that goods traveling on such an entry must be billed in bond. The railway company is required to furnish a bond, about two million dollars for the safe handling of immediate transportation entry goods and, also, for the surrender to the customs of the original bills of lading on raw silk.

Prior to the arrival of the steamer in the port, and on receipt of the advice as to the number of bales of silk in cargo, it is necessary for the railroad to assemble passenger equipment such as baggage cars or express refrigerators to take care of the loading. Before these cars are placed for loading, they are carefully inspected by the mechanical department. The wheels are all jacked up, the brasses inspected, and, if necessary, new brasses applied, then properly lubricated. The cars must be cleaned and the steam pipes going through them must be disconnected; the lamps, if any, have to be removed and the stoves and other projecting appliances of the cars must be crated so as to avoid any damage to the silk by shifting. All the doors must be examined to see that they are tight, and after the cars are loaded, these doors are battened with paper so that there can be no possibility of damage by water. If the shipment

The Silk Is Placed in Sheds and Inspected by Government Customs Men

is large, a special train is prepared, while, if it is small, the cars are carried on regular passenger trains.

As soon as a boat arrives at Seattle, the silk is unloaded onto the dock and placed in sheds where it is inspected by government customs men. The railroad then checks the bale numbers, loads the cars according to destination and records the location of each bale according to the car in which it is placed. The unloading of the boat and the loading of the cars, each of which is accomplished in 1½ hr., proceed under the scrutiny of railroad special agents. This protection is necessary since each bale is valued at approximately $650.

Operating Department Plans Ahead

The operating department of the railroad handling the shipment out of Seattle is notified before the boat arrives that it will be called upon to operate the special train and word is passed along the line so that all divisions will be ready. Each operating division is given a schedule as soon as possible after the boat docks. These schedules are based on the maximum time in which the silk must move over the railroad and, as a result, each division endeavors to handle the train over its territory in less than the allotted time and to make a better performance than other divisions. The first division informs the next of the progress of the train so that no time will be lost when the cars are turned over to the succeeding division. Both the operating and traffic departments at Seattle are also informed of the progress of the train.

The routing of this traffic involves several railroads, the greater portion being handled through Chicago. The lines which receive the cars from the originating lines are informed when the boat arrives, that they will handle the shipment. They also prepare for the handling of the cars in advance. On railroads where traffic is dense, it is necessary to give silk trains preference.

No Time Is Lost in Loading the Cars

The running time between the west coast ports and New York is often better than that of passenger trains. In 1927 the average time for all shipments, both special trains and single cars, was 87 hr., and in 1928 it was 82 hr., while in 1929 it was 81 hr. The frequent speed of some of these trains is indicated by two performances. In one of these, 10 cars left Seattle on August 13, 1924, at 1:05 p. m., and arrived in New York at 7:20 p. m. on August 16, or in 75 hr. 15 min., including terminal delays. On August 14, 1924, nine cars were sent from Seattle to New York where they arrived in 73 hr. 25 min. The time from San Francisco to New York is practically the same as that from Seattle, while the average rail time from Vancouver is approximately 90 hr.

The size of the shipments varies and seldom requires the same number of cars. A special train usually contains 10 cars, although some shipments require 14 cars in a train. In December, 1923, a shipment received at Seattle required 30 cars which were handled in two special trains.

At Vancouver four steamship companies,—the Canadian Pacific Steamships, Ltd., the Osaka Shosen Kaisha, the Mitsui Bussan Kaisha and the Blue Funnel Lines—deliver the silk, while two railroads,—the Canadian National and the Canadian Pacific—carry it to the east. At San Francisco, four steamship companies —the Dollar Steamship Company, the Nippon Yusen Kaisha, the Kawasaki, the Kisen Kabushiki Kaisha and the Mitsui Bussan Kaisha—transport the silk from the Orient and three railroads—the Southern Pacific, the Atchison, Topeka & Santa Fe and the Western Pacific start it on its rail journey.

The methods employed at San Francisco are similar to those at Seattle except that on the Southern Pacfic specially designed cars are used. Special agents at the points at which the train stops are notified in advance and protect the train on its arrival.

Traffic Being Affected by Panama Canal

Prior to 1926, silk was handled almost entirely by rail, but since then the Panama Canal has diverted much of the traffic to the water route.

Number of bales received at West Coast Ports since 1923 according to the Silk Association of America, Inc.:

	Seattle	Vancouver	San Francisco	Portland	Suez	Panama
1923	186,450	93,687	55,645			
1924	243,013	88,411	49,043			
1925	277,624	108,698	103,312			
1926	256,440	119,070	107,240		17,512	1,105
1927	241,131	154,140	117,900		19,959	16,640
1928	245,278	143,845	132,634		8,695	31,319
1929	231,998	133,796	144,216	10,438	12,224	116,496

In 1926 only 1,105 bales passed through the Panama canal, while in 1929 the number had increased to 116,496 bales. A comparison of the charges on similar shipments over both routes shows a great difference in the costs. On a shipment of 126,000 lb. transported by rail the shipper pays an ocean rate of $3 per hundred from the point of origin to the west coast port and a $9 rail rate, or a total of $15,120. The interest on the $585,000 invested for the 13 days required in transportation is $1,250 and the insurance $643, or a grand total of $17,013. In contrast the all-water rate of $6 makes a total transportation charge of $7,560 which, with interest of $1,924 for 20 days, and insurance of $2,164, makes a grand total of $11,648. The difference between the cost of the water-rail service and the all-water service, which in this case is $5,365, appeals to the shipper. Attempts have been made to secure a $6 rail rate, but until the present time all of the carriers have not agreed to the reduction.

Electrical Section Holds Second Annual Meeting

(Continued from page 1031)

required. Now, he said, there are large reservoirs of power assuring continuity of power supply and he expressed the wish that more joint meetings of railroad and power company men could be had so that each may understand the others' problems. The railroads last year used one per cent of the total central station output and Mr. Schuchardt said that the railroad load was desirable because all-night load is included.

Random Thoughts

The address by J. A. Droege announced as "Some Random Thoughts for Electrical Engineers" was based on a wealth of long railroad experience and was spiced with humor. Mr. Droege said that the New Haven's was the oldest and most comprehensive system of electrification in the world but that it would soon have to concede its position as leader in size to another road. The New Haven electrification started in 1906, using the a.c. system and Mr. Droege pointed out that the railroad planning the most elaborate electrification (the Pennsylvania) is now using the same system. Standardization of power, he said, is most desirable and the distribution system should be standardized, as it is analogous to track gage. Electrification, he said, permits closer headway and greater speeds, but recent developments in steam locomotives have made it necessary for the electric locomotive builders to similarly improve their product and for power companies to reduce the cost of power. Railroads should limit their part of electrification to distribution and consumption of power with necessary repair shops. It is unfortunate, he said, that public bodies can compel electrification (perhaps unwisely) which should properly be an orderly development.

Cleveland Terminal Electrification

The paper "The Electrification of the Cleveland Union Terminal" by H. A. Currie, was presented by S. D. Kutner, assistant engineer, New York Central. It was available at the meeting in a well illustrated pre-print describing in some detail the equipment used on this installation. Similar information was published in the July issue of the Railway Electrical Engineer. Mr. Kutner illustrated the report by slides and motion pictures.

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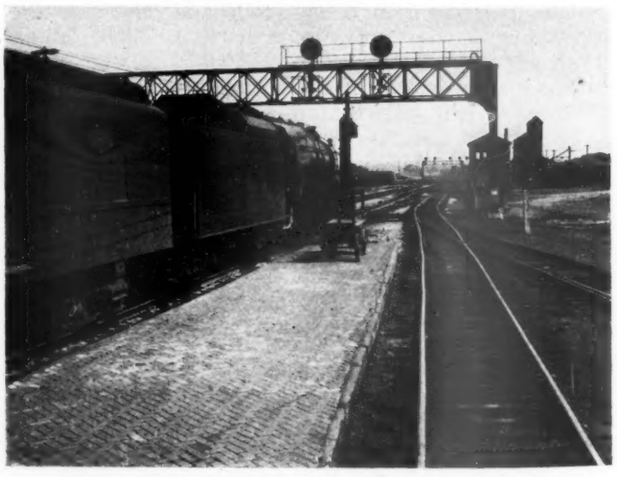


Pennsylvania Train No. 118 at Alliance, Ohio

Railroad Pensions—A Suggested Plan*

New approach to problem made necessary by past experiences and changing conditions

By Samuel H. Cady

General Solicitor, Chicago & North Western

CONDITIONS have changed greatly since the railroads adopted their pension systems 25 or 35 years ago. Wages have increased more than 100 per cent. At the same time hours of service have been reduced and working rules have been established, which greatly diminish the amount of work done by the individual employee for a day's pay. (The expression "work done" is used in the sense of physical effort; improved machinery and methods have resulted in greater output per capita at the present time than 30 years ago.) Concurrently, there has been a great reduction in the earnings of railroads due to many causes, among which may be mentioned (1) increased wages of employees, (2) increased expenditures for purposes which do not produce revenue (required under the police powers of governmental bodies), (3) increased taxation, (4) decrease in passenger business due to the private automobile, the bus and the airplane, (5) decrease in l. c. l. freight due to the motor truck, and (6) inability to secure freight rates comparable to increase in the expense of operation.

Should Railroads Pay Pensions?

Under these circumstances, are the railroads justified in continuing their pension payments, and, if so, on what theory? Certainly not on the theory that it is a deferred wage because the wage now paid most railroad men is as much or more than they would be able to earn in other lines of work; not on the theory that it is necessary to stabilize employment as the union organization rules do that; no man who has worked long for one railroad will surrender his seniority rights by entering the employ of another; not as a gratuity because there is no moral justification in paying gratuities to employees when stockholders, often less advantageously situated financially than the employees, are being paid inadequate dividends, or none at all; not for the purpose of making employees more loyal to the company for which they work because experience shows that union organization leaders give scant consideration to the fact that a railroad company pays pensions in making their demands, and no railroad strike was ever delayed one moment because of pension payments.

If there be justification for railroads paying pensions it is found in the following considerations:

First. Department heads are very loth to retire a man at 70 if he has no means of sustenance other than his wage; keeping the average man on the payroll after 70 does not make for efficiency. A pension system is desirable from this standpoint.

Second. The man with some financial reserve makes a better employee than one who has none. It not only removes worry but gives him assurance not otherwise attained and a mental attitude which makes for efficiency. Thrift is a builder of character. If a railroad company can help its employees to save it makes better men of them, as well as better employees. (A third reason which appeals to some is the favorable public reaction to a concern that pensions its aged or disabled employees.)

This country furnishes an opportunity for the average man to earn enough to support himself and family and provide for old age and the vicissitudes of life if he is industrious and economical.

But our much talked of American standard of living is a menace to thrift. The American standard of living seems to carry the idea that one spend all that he can get his hands on. There is competition for possession of things. So strong is this competition that the average man not only spends as fast as he earns but often faster by purchasing on the installment plan, which is tantamount to spending this year his next year's salary. Vicious sales slogans such as "Pay as you ride" and "Wear a fur coat this winter; pay for it as you can" have tended to popularize extravagance. The last 10 months have demonstrated that the installment buying of luxuries is economically unsound both as to the manufacturer and the buyer. The manufacturer was induced to extend his facilities to unjustifiable proportions and the purchaser has all too often seen his income diminish so that he has been unable to pay the installments.

In view of present-day wages it ought not to be necessary for railroads to help their employees in the accumulation of a reserve fund to meet the contingencies of sickness or accident and the certainty of old age, but because of the extravagant and heedless competition among Americans to live in better houses, dress better, have larger automobiles, the latest in radios, the most expensive in pianos, and regular attendance at the movies, it does seem necessary. One way of doing this is by means of a pension system to which the employees contribute. No railroad should indefinitely continue a system based solely upon the gratuity plan, without contract obligation to the employees and unfunded. It is unfair to employees who shape their course of action relying upon it and is unbusinesslike and unscientific on the part of the railroad.

Suggested Pension Plan

The first problem confronting a railroad management considering a new pension system is what to do with its present one.

The easiest solution is to do nothing with it but to organize and put into effect a new one which in the course of years will supplant the present system.

The following suggestions as to a proposed pension system are made with a full realization that they may be subject to many objections and might have to be

* From a paper read before the Western Conference of Railway Counsel at Chicago, Ill., September 30, 1930. It opened with a discussion of pension experiences on the Chicago & North Western, directing special attention to the increased pension payments, and outlining the reasons therefore. This led naturally to a discussion as to whether the railroads should continue the payment of pensions, with which this extract of Mr. Cady's paper opens.

modified somewhat to meet such objections, and no pretense is made of outlining details of operation.

First. That present pension systems be continued in force as to employees over 45 years of age at the time of the inauguration of the new pension fund and who do not elect to become members of it.

Second. That there be created a pension fund managed by a board of five trustees, having a legal entity, three of which trustees shall be chosen by the board of directors of the railroad and two by the employees contributing to the fund. The term of office of the trustees to be five years and one trustee to be elected each year.

Third. That before being accepted as a member of the pension fund an employee shall pass a physical examination and establish that he is an insurable risk under the rules commonly recognized by life insurance companies.

Fourth. Each employee under 35 years of age at the time of the inauguration of the fund shall, prior to his thirty-fifth birthday, indicate if he elects to come within the provisions of the pension fund. Each employee over 35 years of age in service at the time of the inauguration of the fund shall make an election within one year. Each employee entering the service after the inauguration of the fund shall submit to a physical examination and sign an employment application wherein he shall indicate whether he elects to join the pension fund, but no contributions to said fund shall be received from him until he has been in the employ of the company for one year and then only if his physical examination shows him to be an insurable risk under the rules commonly recognized by life insurance companies.

Fifth. Each employee who elects to join the pension fund and who is accepted as a member shall contribute 2 per cent of his earnings for the period each payday into said fund; the payments to be made by deductions of the same by the paymaster, who shall immediately transmit the same to the trustees.

Sixth. For each dollar paid into the pension fund by an employee the railroad company shall pay into said fund the sum of 50 cents or the equivalent of 1 per cent of the earnings of all employees who elect to join the pension fund, which payments shall be made contemporaneously with the remittances by the paymaster for the employees.

Seventh. That the trustees of the pension fund invest all moneys coming into their possession (except necessary working funds) in high-grade securities possessing the requirements of securities available for trust-fund investments under the Laws of Illinois. Not more than 33 per cent of such investments may be made in the securities of the railroad company.

Eighth. That the amounts paid into the fund by an employee may be withdrawn by him upon leaving the employ of the company (whether voluntarily or otherwise), plus interest compounded annually at 3 per cent.

Ninth. That a member of the pension fund may borrow from it sums equal to the present worth of the amounts paid in by him, but only in case of unemployment for at least six months or protracted illness of himself or members of his family. That the rate of interest charged on such loans shall not exceed the then current rate charged by the banks of Chicago upon first-class collateral loans. That such loans will be repaid by deductions of at least 15 per cent of his wage each payday until paid, but the member may direct that a larger deduction be made. All loans of a member owing to the fund at the time he is pensioned shall be deducted from the accumulations of his payments, and the amount of his pension shall be based upon the balance.

Tenth. In the event of the death of a member of the pension fund before being pensioned, the amounts paid into the fund by him plus the accumulations shall be paid to such person or persons as he may direct, in a lump sum. If there has been no direction as to the beneficiary or beneficiaries of such fund, then the accumulations credited to the member shall be paid to his heirs as determined by the laws of the state of his residence at the time of his death, and if he have no heirs such sums shall be added to the accumulations of the members of the fund.

Eleventh. That upon reaching the age of 70 years or upon becoming permanently disabled while in the service of the company after 20 years of membership in the fund, the employee will be retired upon a pension, payable monthly. The amount of such pension shall be based upon the accumulations of his payments to the pension fund, plus estimated earnings of fund while being disbursed, plus a proportional share of any accumulations remaining from the sum equal to 1 per cent of his earnings paid into the fund by the company after paying the pensions of those who live in excess of the expectancy period and the 50 per cent excess pension of those who waive payments to their heirs (hereinafter provided).

The expectancy of life shall be computed in all cases as 10 years.

The same pension shall be paid to a pensioner after his expectancy of life has expired as prior thereto.

Provided, however, that if an employee be permanently disabled prior to 20 years' membership in the pension fund he shall forthwith be paid the full amount which he has paid into said fund together with the accumulations thereon.

Provided, further, that within 30 days after an employee be eligible for a pension either because of longevity or permanent disability, he may elect to waive any payments to his wife or other heirs following his demise, in which event his monthly pension payments shall be increased 50 per cent.

Twelfth. In the event of the death of a pensioner prior to the termination of his life expectancy, who has not waived payments to his heirs, the balance of the accumulations of the 2 per cent of his wages paid into the pension fund by him shall be paid to his widow or heirs in monthly installments on the same basis as though the pensioner had lived during the fixed expectancy. The pensioner may also direct to what heir or heirs or other person the balance of such accumulations shall be payable. If no such direction be made by him then the payments shall be made to his legal heirs as determined by the laws of the state of his residence at the time of his death.

Thirteenth. Any employee 60 or more years of age may elect to retire and be paid his pension, but in such event the pension payments accrued from his contributions shall be spread over the fixed expectancy of 10 years plus the difference in his age at retirement and the fixed retirement age. For example, if a man retires at 65 his pension accruals will be spread over 15 years instead of 10 years.

Fourteenth. If a member elects to discontinue his membership in the fund while remaining in the employ of the company he shall waive all rights to the sums paid in by him and the accumulations thereon, except that upon leaving the services of the company he shall be paid the actual amount paid in by him with simple interest at 3 per cent per annum.

If at any time the railroad company elects to dis-

continue such pension plan it may discontinue it as to all employees not then members of the pension fund, but shall be under contract to continue the prescribed payments as to all employees then members of the pension fund.

Fifteenth. Accumulations shall be understood to mean the amounts paid into the fund plus net earnings from investments, less the necessary expenses of economically husbanding the fund.

Sixteenth. No assignment or transfer of a member's interest in the fund shall be recognized without the written consent of the trustees.

Amount of Pension Under Suggested Plan

One dollar paid annually in advance for 35 years amounts to about $75 at the end of 35 years when compounded at 4 per cent interest. An employee with an average annual salary of $2,400 would pay into the fund $48 per year. This multiplied by 75 would produce $3,600 at the end of 35 years, but the present value of $3,600 to be paid out in annuities covering 10 years is $4,480. This would produce an annuity of $448 per year or $37.33 per month. This would be increased to $56 if the pensioner waived payments to his heirs. (These figures are approximate.)

Of course it might be possible to earn more than 4 per cent on investments, but it is highly desirable that a fund of this character be handled in a most conservative manner to avoid any losses and thus insure the employees of such certainty as is humanly possible that their pensions will be paid promptly and in full, even though the amounts be smaller than would result if a less conservative policy were followed. An employee paying into the fund $48 per year would actually pay into it a total of $1,680 in 35 years and would be paid back a total of $4,480 if he lived 10 years; if he died before the expiration of 10 years, and did not elect to take the larger pension, his heirs would receive the balance of the $4,480. If he lived longer than 10 years his pension would continue for the balance of his life at the same rate; this additional pension, as heretofore pointed out, would be paid from contributions to the fund made by the railroad company.

Advantages of Suggested Plan

The advantages of the suggested plan may be enumerated briefly, as follows:

1.—The employee members will be sure of their pensions regardless of changes in management or economic conditions. One of the justifications of a pension system is to free employees from the financial worries of old age; the present systems do not relieve him entirely of such worry for he has no positive assurance of the continuation of pension payments.

It will be noted that the plan contemplates that every cent paid into the fund by an employee, together with all accumulations thereon, shall be repaid to him or his heirs, unless he elects to draw the larger amounts himself. The amounts paid into the fund by the company are to care for the pensions of employees living beyond the 10-year expectancy and the extra 50 per cent of those who elect to waive payments to heirs, with provision made for adding the surplus from these payments to the accumulations of all members. It is believed that actual experience will show that substantial additions to the members' accumulations will be made from this source. The uncertain factor here is the expectancy of life of those pensioned for permanent disability. The data available on the subject is so meager that definite estimates cannot be made.

2.—Provision is made for emergency loans in case of protracted illness or extended unemployment. Too often, under present conditions, employees do not know where to turn when in financial straits and fall into the hands of loan sharks, thereby subjecting themselves to great financial loss and much discouragement.

3.—Provision is made for paying pensions to the widows and heirs equal to the accumulations of the amounts paid in by the member. It sometimes happens that pensioners only live a year or two after being pensioned. They are survived by widows, unmarried daughters, or others who are dependent upon them and who are frequently in sore need when the pension is cut off under existing pension systems. The suggested plan meets this situation to some extent.

4.—The primary reason for requiring applicants for membership in the fund to pass a physical examination is to eliminate persons suffering from syphilis, which so frequently results in a general physical and mental breakdown.

The underlying thought of a disability pension is that an employee is paid a pension for disability incurred in connection with his work; there is no justification in paying a pension to a man who invites disease by his own indiscretions.

Another advantage to the employees in requiring a physical examination for membership in the fund is that sometimes a man has an incipient disease which a careful medical examination will detect in time so that the necessary treatment may be taken to cure it. The question may be raised as to whether it is fair to exclude the physically unfit from the benefits of a railroad pension system. The answer to this is that a railroad is not a place for weaklings or defectives. The sooner any such get out of railroad service, the better. Man failures are responsible for most railroad accidents. (It is believed that frequent regular physical examinations would forestall most accidents resulting in injuries to passengers.) The traveling public trusts its lives to railroad employees. Railroad managements are not doing their entire duty to the public until they see to it that only men with clear heads and well bodies are employed.

5.—The most cogent argument in favor of the plan is that the member himself is creating something of an estate; that makes for a mental attitude which increases his happiness, efficiency as an employee, independence as an individual, and makes him a better citizen.

6.—Another advantage of the plan as contrasted with any funding of the present pension is that the railroad company avoids the enormous cost of funding present pensions. In fact, with many railroads this would be impossible. Under this plan the railroad will pay the expense of the pensions of its employees as they accrue and not defer the charge to some time in the future.

7.—The advantage of the provision providing for a pension if a man retire prior to 70 years of age is that frequently a man in his sixties is so situated financially that he could retire and is desirous of doing so but is kept at his work because of the fact that if he voluntarily retires before reaching the retirement age he forfeits all pension. Of course, the pension paid to one so retiring will be much less than if he continues to work until he is 70. This, for three reasons, first: his contributions to the fund are less; second: the contributions have less years to add to the accumulations, and third: the monthly payments are spread over a few more years.

Will Employees Elect to Join the Plan?

It may seem to some employees that the part paid into the fund by the railroad should be larger. It is believed,

(Continued on page 1048)

Railway Fire Losses Again Reduced

Association meeting at St. Louis prepares to counteract increase usually occurring after depression

The Fire Brigade and Hall at the Angus Shops of the Canadian Pacific at Montreal, Que.

THAT the trend of fire losses varies with general business conditions, increasing in times of depression and decreasing with prosperity, was explained at the seventeenth annual meeting of the railway Fire Protection Association at St. Louis, Mo., on October 21-23, with President E. Moore, insurance commissioner of the Canadian Pacific, presiding. The program included discussions of the various problems of railway fire protection, reports of committees and addresses by various speakers, among whom was L. W. Baldwin, president of the Missouri Pacific. The Committee on Statistics reported a decrease in fire losses for 1929 as compared with 1928.

One day of the meeting was devoted to the report of the Hand Book Committee and discussion of the proposed changes in the book. On the last day of the convention, officers were elected as follows: President, W. F. Hickey, superintendent of insurance of the New York, New Haven & Hartford; vice-president, G. L. Ball, superintendent of insurance and safety of the St. Louis-San Francisco, and secretary-treasurer, R. R. Hackett, chief inspector of the Baltimore & Ohio (re-elected).

Fire Loss in 1929

The most gratifying report was that of the Committee on Statistics presented by its chairman, J. E. Fraser, general fire protection agent of the Boston & Maine. The report showed that on 67 railroads the fire loss in 1929 amounted to only $4,376,345 as compared with $4,508,112 on 63 railroads in 1928. This figure for 1929 also compares favorably with that of 1920 when the total was $10,563,914. The loss per road also decreased, the amount being $65,318 in 1929, $71,557 in 1928 and $140,852 in 1920. The average loss per fire in 1929 was $668, in 1928, $740 and in 1920, $1,324.

The outstanding cause of fire loss in 1929 was 78 wrecks which account for $633,492. Exposure caused 581 fires and a loss of $428,841. Smoking and matches were responsible for 729 fires which cost the railroads $340,995, while sparks or hot coals from locomotives caused the largest number of fires, 738, with a loss of $187,031.

Box cars formed fuel for 1,525 fires which caused a loss of $766,374. On 138 occasions merchandise in transit burned, causing a loss of $527,371. Sixty-eight wharf fires resulted in a loss of $482,210, while 583 fires in miscellaneous buildings were responsible for losses of $402,583.

1930 Losses Will Increase

F. R. Bradford, director of safety and fire protection of the Boston & Maine, while speaking on the subject, "Depression of Business and How It Affects Fire Prevention and Fire Protection on Railroad Properties", stated that a study of the trends of general business and fire losses indicates that the losses for 1930 will show an increase over 1929. In his study he used the Harvard curve which shows the fluctuations of general business and against it plotted the fire losses of the country as a whole and the fire losses of the railroads. He also studied the relation of business and fire losses in Boston. In 20 of the 26 years included in the study, he found a definite relationship between business conditions and fire losses. When business flourished, fire losses decreased, but when depression set in the losses

increased. During the business recessions of 1903-4, 1908-10, 1913-14, 1920-21 and 1923-24, a sudden drop in business was accompanied by an increase in fire losses which manifested itself from one to six months after the decrease. His study of Boston business and fire losses showed the same relationship but to a more critical extent. A recession in business following holiday trade, particularly Christmas purchasing was accompanied by increases in fire losses, while monthly business conditions also had a corresponding effect.

The reasons for increases in fire losses during business depression, he said, vary, the predominating cause being a lack of interest and resulting poor "housekeeping", while arson and incendiarism are also important factors. During business recession, interest wanes and stockrooms, warehouses and yards are often neglected and materials stored therein permitted to become fire hazards. At the same time, a reduction of forces during depression lessens the total vigilance exercised on the properties. Although arson and incendiarism have decreased during the past few years, some unscrupulous business men still set fire to the properties of unsuccessful businesses and some digruntled employees still seek vengeance by igniting the buildings of their former employers.

Since arson does not exist on railroads and incendiarism is almost negligible, the relation between business and railway fire losses is due primarily to "bad housekeeping" and a curtailment of forces. Upon this supposition, he recommended that railroads spend as much as possible during prosperous years to secure adequate fire protection in order to reduce the hazards of less prosperous periods.

During the past few years, the railroads have made marked progress in fire protection. At the present time the orderliness of their properties is better than it has ever been, and fire protection equipment on most roads is ample to meet the needs. Under these conditions, he concluded, the railroads have a fair chance of holding down the losses for 1930 and thereby interrupt the trend which has prevailed in the past.

Fire Losses in Rolling Stock

The Committee on Fire Losses in Rolling Stock, of which George H. Scott, insurance inspector of the New York, New Haven & Hartford, was chairman, recommended that in storing empty cars double end tracks be used and that the cars be separated into blocks of 10 cars with 75 ft. between. It also suggested that when wooden and steel cars are being stored every second track be used for steel cars to reduce the hazard of the wooden cars. The committee also advised the members of the association to have straw, etc., removed from all stored cars and all openings closed. It further recommended that yard locomotives be equipped with fire fighting apparatus.

During the discussion of the report, a representative of one railroad stated that on his lines the doors of stored cars are fastened with a cleat which is nailed on the top of the door, this location being selected by reason of the fact that to remove the cleat the trespasser must work from the top of the car and thereby expose himself. The recommendation that electric lights be used when clearing wrecks in which gasoline or other inflammable oils are involved also created discussion which disclosed interesting practices on various railroads. One railroad reported that in a recent derailment of gasoline cars on the main line after dark it was deemed advisable to wait until daylight to clear the line rather than to approach the wreck with lights that might cause an explosion. Another railroad told how it safely removed an overturned car of gasoline which prevented the approach of the locomotive and crane because of the fires under the boilers. To remove the wreckage, a train of 30 cars was formed, with the crane at one end and the locomotive at the other, so that the fire of the latter would not be near the gasoline-laden air around the wreck. The fire on the crane was extinguished, the boiler was connected with the air line of the train and the crane operated successfully.

Torches on locomotives occupied part of discussion, E. Williamson, insurance inspector of the Southern, maintaining that it is not the flame of the torch that causes fires in cabs but the smoldering wick which comes in contact with a combustible material when the torch is thrown into the cab box. It was generally believed that the longer cab curtains which the recent law requires will increase the number of fires in cabs since these curtains extend to a point where the fire hazard is great. To eliminate cab fires, one road requires its enginemen to remove all supplies before leaving the locomotive.

Business Depression Waning

L. W. Baldwin, president of the Missouri Pacific told the members that the business depression which prevailed during the past few months is now being replaced by increased activity in almost all branches of industry. He was of the opinion that marked improvement in business will manifest itself in a short time.

In his discussion of business depression, he showed how motor coach and truck competition has magnified the recent recession in railroad business and stated that measures to arrest the loss of railroad business to these agencies must be applied. He also commented favorably upon the statistics on railroad fire loss.

"Co-operation Between Shippers and Carriers in the Prevention of Fire" was ably described by X. P. Wilfley, ex-senator of Missouri. He congratulated the association on the work it had done in preventing fires and in bringing about an understanding with shippers which has lessened the losses on property adjacent to that of the railroads. The main theme of his address dealt with the spirit of unity which has made possible the great accomplishments of the age.

Clifford Strain, assistant sales manager of Walter Kidde & Co., gave an interesting talk on the carbon dioxide fire extinguisher, the effectiveness of which is due to liquid carbon dioxide. He demonstrated the harmless effects of the "snow" emitted from the container on chairs and clothing in the room and explained how the extinguisher can be used to put out fires in electrical apparatus particularly in the winding of generators and motors causing a short circuit and without damaging the equipment.

Purchased vs. Home-made Incinerators

The Committee on Incinerators, of which P. A. Bissell of John C. Paige & Co., is chairman, reported that a survey of incinerators on railroads reveals such a wide variety of types in use that standardization is almost impossible. The committee felt that since much time and effort has been made by manufacturers to develop incinerators, those on the market which are carefully designed and are built of proper stock are likely to outlast the average makeshift by such a margin as to fully warrant any additional cost.

In discussing the portable type, Mr. Bissell said that these vary from the light wire basket manufactured for domestic use to old boilers or tanks which have

been remodeled. In constructing portable incinerators, he said no metal should be used that is not of sufficient thickness and suitable composition to reasonably resist the effects of heat and corrosion. The agent or the supervisory officer in direct charge of the property should be held responsible for the proper operation and the immediate reporting of any defect observed in their condition.

Unless a railroad has competent engineers who can give ample time to a thorough study of the stationary incinerator which handles large volumes with the resulting high temperatures, the most efficient results can be attained by having the problem investigated and handled by one of the several commercial concerns specializing in such devices. The basis of a good stationary incinerator, he said, is a steel frame with brick on the walls. The combustion chambers should be lined with fire brick and the heating and cooling effects must be considered.

Advertising To Solve A Specific Problem*

By J. M. Gibbon
General Publicity Agent, Canadian Pacific

THE Canadian Pacific, as is generally known, is the proprietor of a summer resort hotel at Banff, in the Canadian Rockies. In this hotel $9,000,000 has been invested and though the season lasts only four months, the Canadian Pacific route through the Rockies is so spectacular and has been for many years so widely advertised that in a normal year such as 1929 the hotel attracts sufficient business to be run at a small profit. But owing to the nature of this business, which is of a very transient character, it is a difficult hotel to operate. The passenger traffic manager likes to have a steady stream of long distance tourists filling a constant succession of trains, for each passenger represents a ticket and a berth or compartment, or even a private car. The hotel manager prefers guests who stay for some time, rather than different guests each night for th same rooms.

The Banff Springs Hotel was recently rebuilt on a large scale in such a way as to cater to both permanent and transient guests, with an a-la-carte as well as a table d'hote dining room. In 1929 we had transients by the thousand, but the permanent guests (i.e., those staying fourteen days or more) numbered only 20. It was therefore decided to plan an advertising campaign which would increase the number of permanent guests, and in this camapign we used:

1. Magazine advertisements with color pages in a selected group of publications, appealing particularly to subscribers of over $10,000 income. The rates (European plan) at the Banff Springs Hotel range from $10 a day upwards, so that our prospects were limited to the well-to-do.

2. Black and white advertisements in golfing magazines, drawing attention to the newly completed golf course on which $500,000 had been spent.

3. Newspaper advertisements in a selected list of papers in the eastern United States.

4. Direct-by-mail campaign on a list of 30,000 selected names in the eastern states.

5. Radio broadcast over a chain of 12 stations affiliated with WJZ, operated by the National Broadcasting Company.

This radio campaign developed out of the problem we had to solve. Since we were hoping to increase the number of permanent guests, we had to prepare for those guests a variety of entertainment, otherwise they might find the evenings dull. During the spring months we had instituted a Canadian Pacific hour of music on a Canadian transcontinental chain broadcast which was produced in a Toronto studio. We therefore decided to install in our hotel at Banff a radio studio linking up with the Canadian Pacific chain broadcast transmission system, and to produce the programs at Banff during the months of July and August. In order to produce such programs we transferred a light opera company from Toronto to Banff, and used this company to produce two light operas each week for the entertainment of guests at the hotel. We arranged with the National Broadcasting Company to accept our Toronto programs for the WJZ chain during the months of April, May and June, and advertised in all our radio announcements that the musical program was being produced by members of the light opera company which had been engaged for the entertainment of summer guests at the Canadian Pacific hotel at Banff.

This radio campaign was tied up with "listen in" announcements in the magazine and newspaper advertisements and the "fan" mail which amounted to five thousand letters was followed up by those handling the direct-by-mail campaign.

The cumulative effect of these five methods of advertising had satisfactory results. In spite of the business depression in the United States and the considerable decrease in tourist traffic, the number of permanent guests (i.e., those staying a fortnight or more) at the Banff Springs Hotel increased from: 20 to 1929 to 264 in 1930.

These guests came chiefly from the territory in which the advertising was concentrated. While the volume of transient business showed a decrease, the Banff Springs Hotel had a nucleus of permanent guests which was the envy of all other Western resorts. As we were able to provide these guests with a wonderful golf course, unrivalled scenery, excellent service and a great variety of unusual entertainment, we are assured that a large number of them will return next year, as they seemed to be people of substantial incomes not affected by stock market ups and downs.

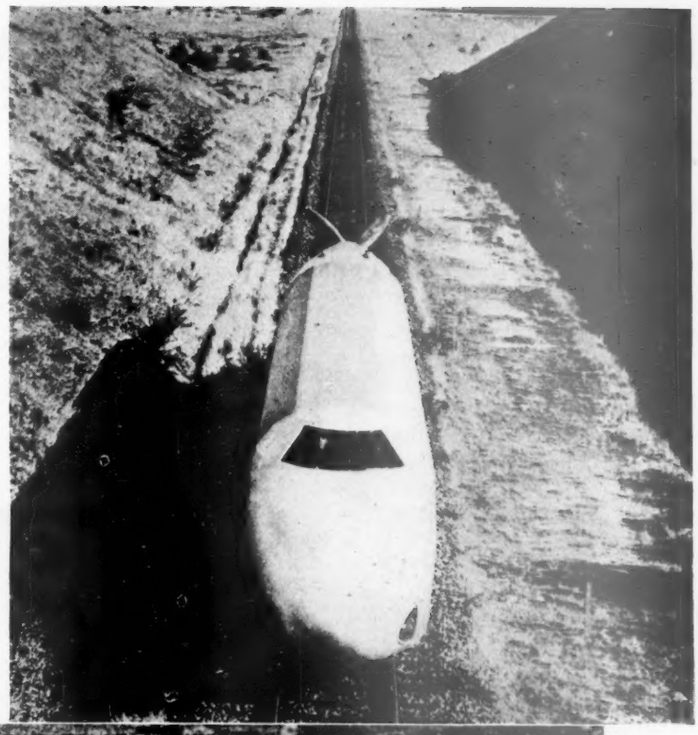
The cost of this campaign was $60,000, and a rough estimate of the revenue resulting has been made at $600,000. The Canadian Pacific is, of course, in the unusual position of owning its own hotels, sleeping and dining cars and commercial telegraph system, so that its revenues from traffic of this nature are not confined to the sale of railway tickets.

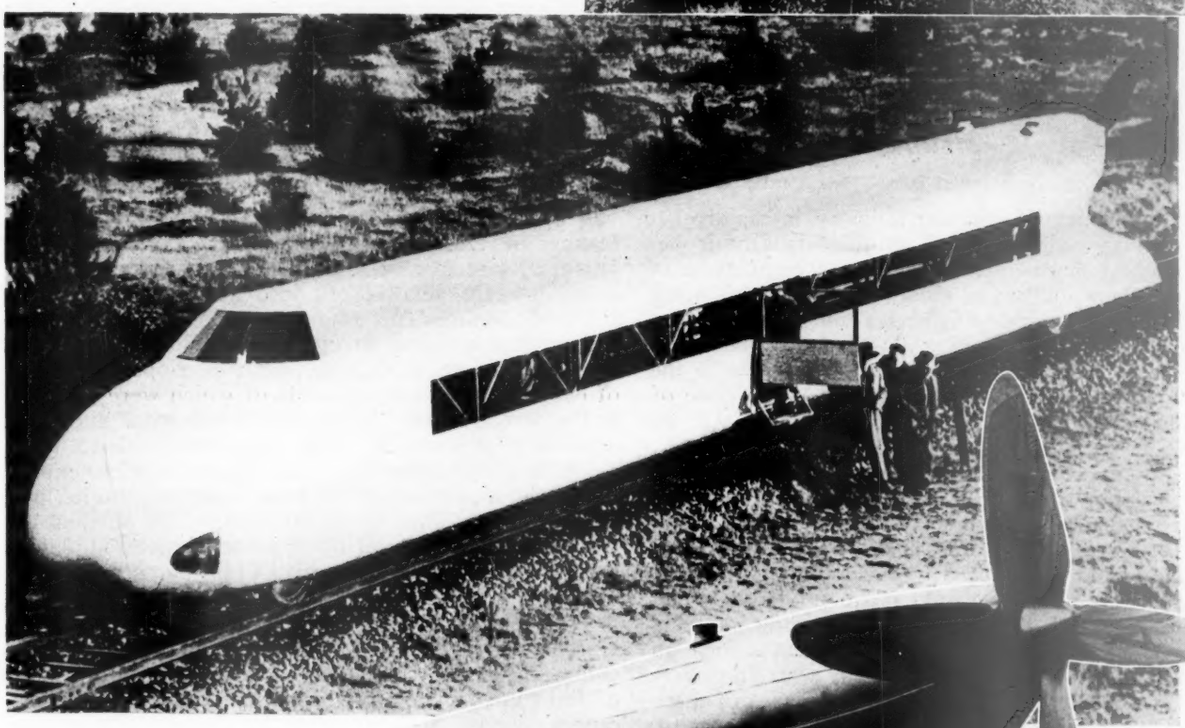
My opinion is that radio helped considerably in this campaign. As a result of our experience we are using the WJZ network for a steamship advertising campaign. The radio feature is entitled "The Musical Cruisaders" and deals with the adventures of a party of musical enthusiasts who make a cruise round the world on the Canadian Pacific Steamship "Empress of Australia." The Canadian Pacific is heavily interested in cruise business, and this radio broadcast is intended to give a fillip to that business which at present is rather in the doldrums. After cruising round the world, these Musical Cruisaders will make a tour of Europe and incidentally draw attention to the Canadian Pacific Atlantic services. The hour of this radio broadcast is 4:15 to 4:45. Eastern Standard Time, on Sunday afternoons.

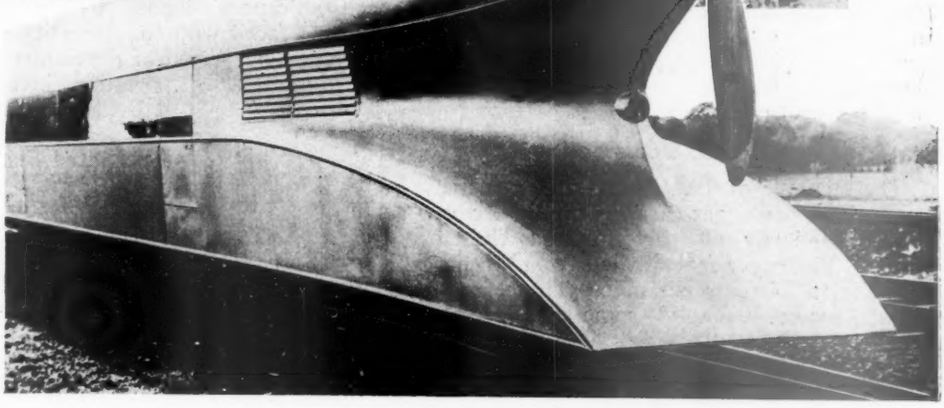
* An address delivered at the convention of the American Association of Passenger Traffic Officers, Atlantic City, N. J., October 8, 1930.

New German Rail Car

REACHING speeds in excess of 100 m.p.h., the rail car shown in the accompanying illustrations, and best described as a "Zeppelin on wheels," has recently been successfully tried out on a five-mile tangent near Hanover, Germany. Tested by the German National Railway Company as a possible means of meeting air and highway competition, the new car is 85 ft. long and weighs about 20.5 tons. Power is derived from a four-bladed propeller, driven by a 500-hp. airplane engine—said to be twice as large as necessary—which also operates air compressors and electric generators, and runs about 4.4 mi. per gallon of fuel. Acceleration is rapid, a speed of 100 m.p.h. being attained within two minutes of starting. The highest possible speed is said to be 185 m.p.h., but the greatest yet reached on the short test track is 124 m.p.h. Both air and automobile type hand brakes, operated independently, are provided. The body, of steel tubing covered with aluminum and balloon fabric and supported on two axles, 65 ft. apart, contains comfortable accommodations for 40 passengers.







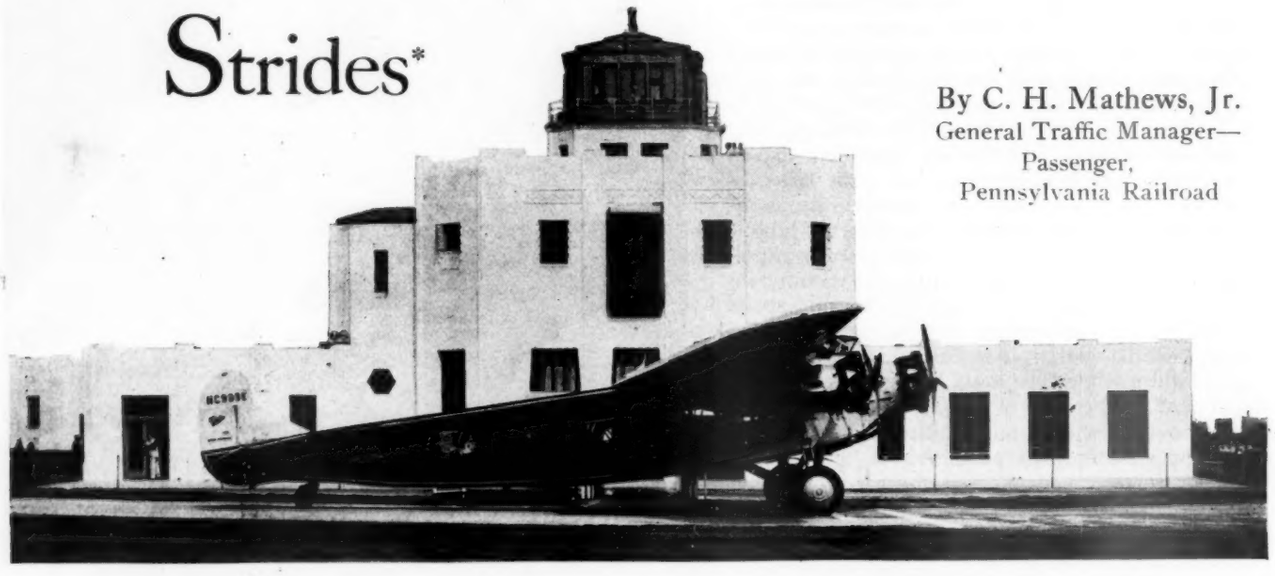
Top—Front View of Germany's New "Zeppelin Rail Car," Taken From Above

Center—Side View, Showing Single Axles, Driver's Cab and Center Entrance Door

Bottom—The Fully Streamlined Rear End, with Propeller and Motor Compartment Louvres

Air Transport Making Rapid Strides*

By C. H. Mathews, Jr.
General Traffic Manager—
Passenger,
Pennsylvania Railroad



Governmental aid through mail contracts and great technical progress building new transport medium into powerful competitor

THE commercial aviation industry is rapidly becoming stabilized, and as this stability is becoming more apparent, and the comfort, convenience, dependability and safety of air travel is being established in the minds of the traveling public, more and more people are becoming air-minded. There was an increase of 54 per cent during the past year in the number of air lines in active operation. At the close of 1928 there were 63 air lines and at the end of 1929, 97 lines.

In many cases these lines were organized on an ambitious basis, and large sums of money invested in both equipment in the air and on the ground. During 1928 many of these companies had a belief that only a short time would be required to develop air travel to a point where the business would prove profitable. The more ambitious of these passenger-carrying projects were developed around tri-motored aircraft, such as the Ford and the Fokker F-10, and by watching overhead carefully it was possible to operate planes of these types for approximately $1.00 per mile—their capacity, in practically all cases, was twelve to fourteen passengers. Accordingly, fares were set up designed to produce a profit from operations assuming a 60 to 75 per cent capacity load.

Rates and Expenses Too High at Outset

The summer of 1929 found an extensive network of passenger carrying air lines covering practically all parts of the United States. Passenger fares varied from 9 cents per mile to 17 cents per mile. These fares might have made possible some small profits had operations been carried on in a more economical manner and had traffic developed to the extent expected; however, circumstances turned what seemed to be a possibility for small profit into actual deficits. The spirit of the times encouraged unnecessary expenditures rather than economy in operation. The lines in their endeavor to cater to de luxe traffic, developed a number of expensive services, the costs of which were included in the fare charged. These services included such features as transportation from downtown hotels to flying fields, free luncheons enroute, steward service, expensive flight souvenirs and, in some instances, motion pictures on the planes while in flight. The obvious result was that the cost of flying these tri-motored planes, instead of being approximately $1.00 per mile, ranged in practically every instance far above this figure.

The operators of commercial air lines were convinced after several months of operation that a sufficient volume of traffic could not be developed at the basis of fares in effect to afford capacity or even 50 per cent capacity loads. By the end of the year 1929 they were faced with the necessity of preparing themselves for a long period of development of this new form of transportation, involving both the future of the individual companies as well as the future of commercial air transportation generally in the United States.

C. H. Mathews, Jr.

Lower Rates Bring More Business

The reaction to this situation was prompt and a natural one—during the early months of the year 1930 drastic efforts were adopted for the purpose of reducing operating costs and unnecessary and wasteful features of the service were eliminated. At the same time marked reductions were made in passenger

* Report of a committee of which Mr. Mathews was chairman to the convention of the American Association of Passenger Traffic Officers, Atlantic City, N. J., Oct. 8, 1930.

fares which originated in the southwestern points of the country. These reductions, to as low as 5 cents per mile, were made with the purpose of ascertaining whether or not the failure of the American public to travel by air was due to timidity or excessively high charges. Coincident with these efforts a movement took definite form to secure the passage of a new air mail bill through Congress, designed to assist in developing a balanced air traffic, of not only mail but express and passengers, rather than merely to further encourage the carriage of air mail alone. This movement received the support of all interested air lines having air mail contracts as well as those which were exclusive passenger carriers.

The economies effected in operation brought the actual costs down to about the original estimate. The reduction in fares was followed by an immediate public response which filled practically every transport airplane in the country, and resulted in the addition of new schedules and the frequent running of second sections. At fares of approximately 5 cents per mile, passenger traffic increased 350 per cent from January to June, 1930; however, it was quite obvious that with a twelve-passenger airplane, costing approximately $1 per mile to fly, there was no possibility of profit from a 5 cent per mile charge, even though operations were carried on continuously at 100 per cent capacity. This fact, together with the great demand for space on the air lines, lead the operators quite generally to raise their fares, about July 1, 1930, to approximately 7 cents per mile. While there has not as yet been sufficient time to determine definitely how this increased charge will work out, it is the feeling of operators generally that the cost of air passenger travel will probably stabilize itself somewhere around this figure.

It was obvious that some artificial assistance was required for the air transportation business through the period in which the available equipment was too expensive to operate and show a profit regardless of traffic conditions. To accomplish this a revision of the air mail act was undertaken.

New Legislation a Great Aid

The Watres Act passed both Houses of Congress late in April, 1930, and was signed by the President early in May this year. This act provides for the letting of air mail contracts on a per mile rate for definite weight spaces. It places considerable authority in the hands of the Postmaster General which, it is believed, will result in a distribution of mail contracts leading to the development of balanced air traffic throughout the United States. The act is now in the process of being interpreted by the various controlling departments of the government. In the meantime, the Postmaster General is working with the air line operators to develop logical routes over which the mail should be carried, and assigning proper rates on those routes, not subject to competitive bidding. It is on the results of these negotiations and studies that air transportation in America now waits. Among the operators the feeling is quite general that upon the manner in which these mail contracts, under the Watres act, are finally worked out, depends largely the entire future of American air transportation.

While the business of air transportation has been passing through a period of disillusionment, developments have been taking place behind the scenes which definitely point to a sound and extensive expansion of aviation activities in the near future. Plane designers are bringing out new models of larger and faster airplanes. The airplane motor, receiving as it is the attention of some of the world's most expert engineers, is rapidly being developed along lines of greater power, lower operating costs and greater reliability. An aircraft motor built on the Diesel principle has been designed and is in operation. Instruments for night flying, and flying through fog, are being perfected. The mechanical steersman, and mechanical or semi-mechanical means of landing planes on fog covered airports, are in the making.

Aviation Radio Progresses Rapidly

The marvelous science of radio, through the efforts of a group of brilliant young radio engineers, co-operating with the Federal Radio Commission and the manufacturers of radio equipment, has been harnessed for use of the airplane. Even today the air transport plane is in closer touch with its ground terminals and stations through the use of radio than is the railroad train. No one can say what the future holds in this great field of aeronautical radio. All over the country fine airports are being developed. At this time, when pessimism is so much the order of the day, the ground work is being laid, and the stage set, for air transportation development that will shrink the map of the United States to one-quarter of its present size.

There can be no question of the future of air transportation in this country. American business and the American public have tested its tremendous advantages. The problems which lie ahead are those of any developing industry and commercial aviation is going through a period of development similar to that experienced by the railroads in the early days of their history. More of our railroads have come to see the possibilities in the future of air transportation as not entirely a competitor, but as an auxiliary and necessary link in the transportation web of our country.

Outstanding Developments in 1929

Following are some of the outstanding developments during the year 1929:

1. *Airplanes in commercial use*:

In 1928 there were 325 airplanes in commercial use in the United States, and in 1929 there were 525 (estimated by United States Department of Commerce), an increase of 200 or 61½ per cent.

The value of airplanes in service and reserve, according to Department of Commerce statistics, equalled $12,000,000 in 1929, an increase of $5,000,000 over the previous year.

Personnel employed in airplane service totaled 2,000 in 1929, an increase of 504 over previous year.*

2. *Total number of air miles flown by commercial airplanes*: *
   1928—10,673,450 miles
   1929—25,141,499 miles
   Increase—14,468,049 miles, or 136%.
3. *Total number of passengers carried for hire on regularly established air lines*: *
   1928— 49,713 passengers
   1929—173,405 passengers
   Increase—123,692 passengers, or 249%.
4. *Total amount of mail carried by airplanes*: *
   1928—4,063,173 pounds
   1929—7,772,014 pounds
   Increase—3,708,841 pounds, or 91.2%.
5. *Airports*: *

Municipal airports, as of December 31, increased in number from 368 in 1928 to 453 in 1929.

Private and commercial airports, as of December 31, increased from 365 in 1928 to 495 in 1929.

Total number of airports (exclusive of military):
   1928—733 airports
   1929—948 airports
   Increase—215 airports, or 29.3%.

6. *Lighted Airways*:

The situation in the United States as to lighting airways, lighting of airports, etc., at the end of 1929, shows interesting and steady growth. At the close of 1928 there were 6,988 miles of lighted airways as against 12,448 miles at the close of 1929, an increase of 5,460 miles or 78.1 per cent. In addition to this,

* Statistics secured from Department of Commerce, Aeronautics Branch.

there were 1,352 miles of lighted airways under construction at the close of 1929.

In 1928 there were 1,188 electric and gas beacons, and in 1929, 1,311, an increase of 123 or 10.3 per cent.

Airway beacons are established at approximately ten-mile intervals from airport to airport on all lighted airways.

The first night flying of passengers on regular schedule was inaugurated by the Boeing System between Salt Lake City and Oakland, California. Night flying is now carried on by the Boeing System in connection with the Varney Air Lines between Salt Lake City and the State of Washington.

Statistics secured from Department of Commerce, Aeronautics Branch. Information obtained from Aeronautical Chamber of Commerce of America, Inc.

7. *Railroads co-operating with commercial air lines*:

There were additions to this list during 1929 as follows: †

Boston & Albany
Canadian Pacific
Central of Georgia
Chicago & Alton
Chicago, Burlington & Quincy
Chicago & North Western
Chicago, Rock Island & Pacific
Frisco Lines
Hocking Valley
International-Great Northern
Minneapolis, St. Paul & Sault Ste. Marie
Pere Marquette
Southern Railway
Union Pacific

While all of these railroads are not directly associated with air lines, they at least have connections with them, and in most instances represent some air lines in their offices throughout the country.

8. *Principal aviation companies associated with railroads*:

There were also some additions to this list, as follows:

Colonial Air Express
Continental Airways, Inc.
Embry-Riddle Company
Kohler Aviation Corporation
New York, Philadelphia and Washington Airway Corp.
Pacific Air Transport, Inc.
Southern Air Transport
Southwest Air Fast Express, Inc.
Stout Air Lines, Inc.

9. *Co-ordinated rail-air service*:

There has been a substantial increase in the patronage of this service, due particularly to lowered fares and faster time.

a. The T. A. T.-Maddux Air Lines, in co-ordination with the Pennsylvania and the Atchison, Topeka & Santa Fe, now make the trip from New York to Los Angeles in 49 hours 50 minutes westbound and 44 hours 55 minutes eastbound, instead of approximately 50 hours 47 minutes when this service was first inaugurated.

b. The Western Air Express, in co-ordination with the New York Central and the Chicago & Alton or Atchison, Topeka & Santa Fe, have a service from New York to the Pacific Coast with running time of 47 hours and 40 minutes.

c. There is a form of co-ordinated rail-air service between the United States and Cuba and the United States and South America through the connections afforded and ticketing arrangements in effect with the Pan American Airways at Miami, Florida, by the Florida East Coast, the Atlantic Coast Line, Pennsylvania, and other rail lines.

d. A form of co-ordinated service is also available between the United States and Mexico through connections and interchange arrangements of the Missouri Pacific at Brownsville, Texas, with the Corporacion Aeronautica de Transportes, S. A.

Through connections and interchange arrangements are also available between the United States and Mexico by the use of various air lines and railroads to Brownsville, Texas, thence Pan American Airways, or vice-versa.

10. *Fares and Regulations*:

The average passenger mile fare during 1929, according to Department of Commerce Statistics, was 12c.

An interesting and outstanding development during the past year and particularly during the first six months of 1930, has been the growth of interline traffic, through interchange, and interline ticketing arrangements placed in effect by the various air lines. The air carriers have also become more closely associated for the development of schedules convenient for interline traffic.

The Traffic Committee of the American Air Transport Association is also developing to a point where it is proving decidedly helpful in connection with uniformity of method in the ticketing and transportation of passengers.

† The roads Mr. Mathews mentioned as co-operating with air lines a year ago were as follows: A. T. & S. F., A. C. L., B. & O., C. & E. I., C. G. W., C. M. St. P. & P., F. E. C., G. N., I. C., K. C. S., L. & N., M-K-T. Mo. P., M. & O., N. C. & St. L., N. Y. C., N. Y. N. H. & H., N. & W., N. P., Penna., S. P., T. & P., and Wabash.

Likely to Expand Faster Than Highway Travel

The developments clearly indicated the continued growth in passenger travel by air. While the rail lines may not feel seriously the trend of travel away from the rails and into the air for several years in the future, nevertheless, it is evident that the airways, with intensive airplane competition, are likely to develop even more rapidly than did the highways with automobile and motor coach competition.

The next few years will undoubtedly demonstrate the necessity for readjustments in various phases of rail passenger transportation as air transport becomes more firmly established as an important link in the transportation facilities of the country.

Railroad Pensions—A Suggested Plan

(Continued from page 1041)

however, that the thinking employees appreciate the financial difficulties of the railroads in view of the increased cost of operation (due in great part to increased wages), the large amount of traffic being diverted from the railroads to the waterways, the highways, and the airways, all of which methods of transportation are subsidized by governments; the unwillingness of regulatory commissions to fix rates affording an adequate return upon railroad investment; the ever-increasing demands of the public that the railroads make non-revenue producing capital expenditures, such as track elevation or depressions, and new station facilities (this is typified in the present attempt to require the railroads of Chicago to electrify their suburban service); the necessity of furnishing the public with non-supporting service and the unwarranted increase in taxes, and that conservative railroad management does not justify larger contributions.

The suggested plan provides a pension which the employee will be as certain of receiving as it is humanly possible to make it. This is surely preferable to the uncertainties of most present-day pension systems. Its many other advantageous provisions constitute strong arguments in its support.

It is confidently believed that thinking employees will elect to join it.

* * *

Norfolk & Western Trains 15 and 16 Passing East of Ironton, Ohio—Picture Taken from Rear of Train No. 15

"Reciprocity" Evidence Used Against Packers

WASHINGTON, D. C.

ACTIVITIES of the traffic officials of Swift & Co., and Armour & Co., in their efforts to sell draft gear to railways under the influence of the routing of their large volume of freight traffic, as disclosed by the investigations of "reciprocal buying" being made by the Federal Trade Commission and the Interstate Commerce Commission, have been brought forward by the Department of Justice against the packers in the hearing now being conducted on the petitions of the two packing companies for a modification of the "packers' consent decree" of 1920. The decree was entered in 1920, following the institution of a government suit against the packers for alleged violation of the anti-trust laws, and embodied an agreement on their part to divest themselves of various interests unrelated to the meat industry. They are now seeking a modification of the decree which will relieve them of some of its restrictions so as to permit them to operate retail stores and engage in certain other activities which were described by the decree as "unrelated." Hearing of the case was begun on October 7 before Justice Bailey in the supreme court of the District of Columbia and the modification sought is being opposed by the government as represented by Harold B. Teegarden, special assistant to the Attorney General.

After the packers had rested their case on November 4 one of the first moves of the government was to introduce as evidence in the case copies of letters between the traffic officials of the two packing companies and railway officials, as well as letters between railway officials themselves, relating to the solicitation of draft gear business for the Mechanical Manufacturing Company and the Waugh Equipment Company, taken from the records of the investigation of the Federal Trade Commission on its complaints charging unfair methods of competition and that of the Interstate Commerce Commission into the whole question of the use of traffic to influence the purchase of supplies. The contents of many of these letters have been brought out in the reports of these hearings heretofore published in the *Railway Age*.

A large number of such letters and other exhibits was placed in the record on November 6 and identified by E. F. Haycraft, attorney for the Federal Trade Commission in connection with its proceeding. O. G. Parsley, Freight traffic manager of the Missouri Pacific, was also called to identify some of the letters and subpoenas had been issued for a large number of railway officers and others who had testified at the hearings to appear in this case on November 13. On November 10, however, Mr. Teegarden announced that an agreement had been reached with Frank J. Hogan, counsel for the petitioning packing companies, whereby the identification and authenticity of the correspondence would be stipulated into the record and the witnesses were excused. The stipulation provides that the witnesses would identify the letters if called on to testify.

"Now the purpose for which we are offering this," Mr. Teegarden said, "is to show the readiness of these corporations to use their business position and control their business to induce the sale of products in which they are interested. In showing this we concede that this reciprocal buying and shipping arrangement is not peculiar to Armour and Swift; that it is frequently resorted to by other industrial concerns and sometimes to a degree equal to or perhaps greater than any that we have found on the part of Armour and Swift in this case. We are not prepared to state at this time that this reciprocal buying and shipping arrangement is in itself and standing alone illegal, but we believe it is relevant to the question of what use will be made of the power of these two petitioning defendants in case they enjoy the business position which might result after a modification of the consent decree. In other words, the trend toward monopoly or danger of monopoly is a result that may come from size plus a number of attendant circumstances and conditions showing how the corporation or concern is willing to use its size and power; and we believe these circumstances are simply illustrative of that question and it is for that purpose that they are offered in evidence."

Mr. Teegarden said the letters between representatives and officials of Swift & Co. and representatives of the railways were offered as evidence of the operations of Swift & Co., and the letters between representatives of the railways as evidence of "the certain effect of the operations of Swift & Co., upon the railroads." Sometimes, he said, they make reference to conversations with Messrs. O'Hara and Mayfield, of the Swift company and Mr. Ellis of the Armour company. "They relate," he said, "to what is known as the reciprocal buying and shipping arrangement between industrial concerns and the railroads, an arrangement whereby, in effect, the industrial concern says, if you will buy certain products in which we are interested, we will make more shipments over your line; or the obverse would be if you do not buy we may reroute our shipping otherwise; or the invitation may come from the opposite direction, from the railroad, to the effect that if you do make more shipments over our lines, then we will patronize these goods in which you are interested.

"These letters, we believe, indicate that Swift & Co., and Armour & Co., use the railroad patronage which they control to promote and induce the use by the railroads of equipment manufactured and sold by certain corporations in whose stock they are interested. These two corporations are the Mechanical Manufacturing Company, which, until its dissolution, was owned by certain personnel of Swift & Co., and certain members of the Swift family. I do not mean owned by them; I mean the stock in the Mechanical company was so owned."

"By individual members of the Swift family and some of the employees of Swift & Co.," remarked Mr. Hogan.

"Yes, and the Waugh Equipment Company, stock in which is owned by members of the Armour family and certain employees or officials of Armour & Co.," said Mr. Teegarden. Mr. Hogen said that there was no evidence that any of the Waugh stock was held by members of the Armour family, but that it showed stock to have been owned by certain officials of the company. He said he admitted the identity and authenticity of the letters but he objected to the admissibility of the letters between railway officials except as they referred to conversations. The court did not rule on this objection.

A report of the proceedings furnished to the press by representatives of the packers described the stipulation as follows: "Further stipulations introduced by Attorney Harold B. Teegarden for the government brought out the fact that it is a general practice for railroads and shippers to solicit business from each other."

I.C.C. Denies Rehearing Of Western Grain Case

WASHINGTON, D. C.

EFFORTS on behalf of the railways to get before the courts, including the Supreme Court, the question whether the affirmative language in section 15a of the interstate commerce act, supposed to impose on the Interstate Commerce Commission the duty of so regulating rates as to provide for a fair return, does not mean more than the weasel words "as nearly as may be" which follow it, are expected as the result of the commission's announcement on November 11 that it had voted to deny the various petitions submitted to it for a reconsideration and modification or rehearing in the western grain rate case.

The petitions had been filed by the western railways generally, by the separate groups of northwestern, Pacific coast and southwestern lines, by the eastern and southern lines that were also affected by the commission's decision, and by many shippers' groups that were not satisfied with the way in which the commission ordered the rates on grain and grain products in the western district and for export revised. The commission's order, originally made effective on October 1, but later postponed until January 1, prescribed a general revision which Commissioner Woodlock, in a dissenting opinion, estimated would involve a reduction of $15,000,000 a year in the revenues of the western lines. The roads themselves, in their petition, expressed the belief that the revenue losses resulting from the readjustment would more nearly approximate $20,000,000.

It is understood that the roads are preparing to take the case to court on the ground that as the western roads are not now earning and never have earned the fair return contemplated by section 15a the provisions of that section are a bar to action by the commission requiring such a general reduction in their revenues as that involved in a general downward revision of rates on such a substantial part of their business as the grain traffic. Although section 15a of the law is understood to be subordinate to section 1 which requires all rates to be just and reasonable, the roads take the position that section 1 applies particularly to individual rates and that the reasonableness of an entire body of rates such as those on grain and grain products cannot be determined except in the light of the revenue situation.

While there has been no announcement that the roads intend to try to take the case to court, a strong indication that that was their intention was conveyed by the language of the petition, which not only asserted that the order would take the property of the roads without just compensation, in violation of the fifth amendment to the Constitution, but also included an extensive legal argument to show that the provisions of section 15a are more than a mere recognition of the right of the carriers to earn a fair return, but impose on the commission an affirmative duty. In the face of earnings constituting considerably less than a fair return, the roads said, the general trend of rate readjustments must be upward rather than downward, and the commission should take steps to increase revenues rather than reduce them.

The commission's statement in its report that it was satisfied that "the readjustment will not threaten the maintenance of an adequate system of transportation" was characterized in the petition as representing "a misconception of the commission's obligation," and the roads declared that "it is not for the commission to say that while Congress has prescribed the means to secure adequate service, the commission may disregard that injunction if it believes it can accomplish the same result by pursuing a different policy."

The petition also indicated a belief that the commission, while stating that the reduced rates it ordered were reasonable under section 1, had actually been more influenced by provisions of the Hoch-Smith resolution, although before the decision was published the Supreme Court had held that the resolution did not mean as much as some had thought it meant. What the roads are objecting to now, however, is that the commission has so long refrained from making rates with reference to section 15a.

In addition to filing the petition for a reconsideration the western railroads have also taken unusual steps to call the seriousness of their situation to the commission's attention in other ways. A committee of western executives sought in vain to obtain an informal conference with the commission and when that was denied on the ground that it looked too much like an ex parte conference in a litigated case they placed their statement before the commission in the form of a printed pamphlet.

Brotherhoods Considering Six-Hour Day Proposals

REPRESENTATIVES of the four train service brotherhoods and the switchman's union met at Chicago on November 12 to consider plans for the inauguration of a program to place the six-hour day in effect on railroads in the United States and Canada. A. F. Whitney, president of the Brotherhood of Railroad Trainmen, who presided at the first day's session made no announcement concerning the form of campaign which the brotherhoods will follow in their movement for a shorter day. It was indicated that the group would remain in session for a number of days.

Plan of Security Owners' President

Meanwhile, on November 10, the National Association of Owners of Railroad and Public Utilities Securities issued a statement outlining a plan, proposed by its president, Milton W. Harrison, whereby a six-hour day could be inaugurated on the railroads, giving employment to thousands of additional men without increasing substantially the total wage bill of the carrier. This statement reads as follows:

When the railroad labor chieftains meet in Chicago next Wednesday to consider a reduction in working hours they will hold one great phase of unemployment in their hands. Workers, executives and security owners in every industry will intently watch their deliberations. That it is possible to temporarily reduce railroad working days per week or month and increase the number of employed without serious hardship or additional cost is the opinion expressed by Milton W. Harrison, representing a large group of security owners. As president of the National Association of Owners of Railroad and Public Utility Securities, Mr. Harrison has just completed a survey of the men and issues involved.

The scope of the labor chieftains' deliberations may be gathered from the number of men engaged. There are about 350,000 employees now at work in the transportation department of the railroads and many thousands more are idle. On the basis of four persons to

a family, 1,400,000 to 2,000,000 people employed and unemployed are directly concerned with whatever action may be taken. As the carriers, because of decreased business, have reduced payrolls in recent months the problem becomes increasingly acute. Unless means are found to distribute work more evenly the total of railroad unemployed cannot be reduced. But Mr. Harrison believes that a way can be found to maintain employment for the greatest number.

"There is a misconception about the question of reducing working hours," he said. "Generally it is stated that the men want eight hours pay for six hours work, thereby adding thousands to the payrolls and vastly increasing the railroads' burden at a time when railroad operating revenues are unable to bear it. Speaking for security owners interested in the financial integrity of the carriers, a six-hour day with either an eight hour compensation or a shortening of the straight day and lengthening of the overtime period with its penalty on the railroads is impracticable and untenable. But that is merely one suggestion and by no means fairly reflects the position of labor, as I understand it. For the leaders of railroad labor are approaching the problem in a statesmanlike manner with a constructive and earnest desire to solve their segment of the unemployment problem and not destructively to overburden the operating expenses of the railroads. It is my conviction that the railroad labor leaders are disposed to make a sound contribution in this national crisis.

"It is very desirable that the issues involved should be understood by the public. This is a question of adding thousands of employes but not increasing total payrolls. It is a problem of readjustment which embraces the whole question of working agreements and established customs."

Mr. Harrison explained that the basis of a day's work for freight engineers and firemen is 100 miles or less, consisting of eight hours work or less, at a speed of 12½ miles an hour. In the passenger service the basis is 100 miles or less, consisting of five hours work or less, at a speed of 20 miles an hour. In order to arrive at the rate of payment, it is necessary to consider the overtime beyond the 100 mile basis. This is determined by dividing the mileage by the speed basis.

In freight service overtime is paid after eight hours on a run of 100 miles. When the run lengthens to 150 miles overtime begins after 12 hours and on a run of 200 miles after 16 hours. In the passenger service overtime on the 100 mile run starts after five hours; for 150 miles after seven and a half hours, and for 200 miles after 10 hours. Only in rare cases of service interruption are the hourly limits reached in passenger service.

Conductors, trainmen and switchmen work on the basis of 100 miles or less, eight hours or less, in the freight and yard service. In the passenger branch the basis is 150 miles a day. Except in the yard and hostler services, on a daily basis of eight hours or less, the monthly earnings of railroad men are largely established by the number of miles covered instead of the hours worked. In the passenger branch the mileage of engineers and firemen is regulated between 4,000 minimum miles and 4,800 maximum miles a month. In the freight service the earnings of the same classifications are regulated between 3,200 minimum and 3,800 maximum miles a month.

"It is necessary to grasp this matter of mileage before the larger question of wages can be discussed," said Mr. Harrison. "Instead of the problem involving a four or five day week, we must think in the terms of 3,200 to 3,800 miles per month, and 4,000 to 4,800 miles per month. In both categories there are men who exceed the maximum or fall below the minimum, but the broad question can be reduced to the two working months. In the extra or part-time services the range is from about 2,600 to 3,800 miles, and when men are placed on the extra list they automatically come within these limits in accordance with seniority. It is true, of course, that a number are almost wholly unemployed at this time.

"Should the railroad labor leaders decide to favor a general reduction of time during this period of depression I believe that it would be fair to put all train employes upon a basis of 2,600 minimum miles a month by reducing the existing minimum of 3,200 miles for freight service and 4,000 miles for passenger service. In this way the number of employed would be increased by about 75,000. Should the leadership of labor—knowing the inability of current railway earnings to sustain any increase in operating expenses—succeed in readjusting the spread of employment to enable additional workers to be employed, they would merit lasting public approbation and gratitude, thereby making it possible to provide for a quarter of a million people whose breadwinners are now out of employment.

"It is apparent to anyone that railroad unemployment in these times cannot be met in any other way. Beyond question it will be impossible for the railroads to employ additional men for a number of months. And it is just as certain that they cannot increase payrolls by any device. The real problem is a simpler one, though it must be expressed in the complicated terms of hours and miles. It is an adjustment. I have faith in a sound, liberal solution by labor and full co-operation by the country's rail executives."

* * *

A Rock Cut on the Champlain Division of the Delaware & Hudson

Looking Backward

Fifty Years Ago

The Union Pacific has recognized the tendency to lower passenger rates by a general reduction over its own lines. The rate from Omaha, Neb., to Ogden, Utah, 1,033 miles, has been reduced from $77.50 to $62, or from 7.5 cents to 6 cents per mile. In the settled portions of Nebraska where local travel is considerable, a general reduction to four cents per mile has been made.—*Railway Age,* November 18, 1880.

Although navigation is still open, the eastbound freight traffic of the railways is so heavy—in many cases beyond the capacity for supplying cars—that an advance of rates on grain to 35 cents per hundred pounds, from Chicago to New York, has been ordered to take effect November 22. The rate on provisions had already been advanced to 40 cents. Last year the tariff announced November 10 made the rate on grain 40 cents and that on provisions 50 cents, but for a time during the Winter rates were forced down to 20 cents and even 15 cents per hundred for grain.—*Railway Age,* November 18, 1880.

The terms upon which the Dominion government has arranged with the syndicate for the completion of the Canadian Pacific provide for the turning over to the syndicate of $25,000,000 in cash and 25,000,000 acres of land, the completion of portions of the railway now under construction and their transfer to the syndicate when the entire railroad is completed. The gross subsidy under this arrangement is estimated to approximate a total value of $105,000,000. Within 10 years the road is to be completed from Lake Nipissing, its eastern terminus, to Buzzard Inlet on the Pacific coast, but the section from Manitoba to the Rocky mountains, about 1,000 miles, must be in operation within three years.—*Railway Age,* November 18, 1880.

Twenty-Five Years Ago

H. A. Worcester, heretofore assistant general superintendent of the Michigan Central, has been appointed general superintendent of that road, with headquarters at Detroit, Mich.—*Railway Age,* November 17, 1905.

A train of four cars on the Pennsylvania carrying a party of railway officers to the Chicago meeting of the American Railway Association made the run from Crestline, Ohio, to Clarke Junction, Ind., on October 24, a distance of 257.4 miles, at an average speed of 75.44 m. p. h. The locomotive was an Atlantic type and the total weight of the train was, with the locomotive, about 520 tons.—*Railroad Gazette,* November 17, 1905.

Ten Years Ago

W. F. Turner, vice-president of the Spokane, Portland & Seattle, has been elected president, succeeding L. C. Gilman, who resigned to become vice-president of the Great Northern at Seattle, Wash. A. L. Johnson has been appointed assistant to the general superintendent of the Denver & Salt Lake at Denver, Colo.—*Railway Age,* November 12, 1920.

All records for the amount of freight handled by the railroads in the United States in a single month were again broken in August, following a record-breaking performance in July. The net ton miles totaled 42,706,835,000, which represents an increase of 6,345,000,000 over August, 1919. The August freight traffic represents an increase of 2,574,000,000 ton miles over July, 1920. The average mileage per freight car per day was 27.4, as compared with 24.2 in August, 1919; 26 in August, 1918, and 27.1 in August, 1917.—*Railway Age,* November 12, 1920.

New Books

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Comparative Fuel Values of Coal, Oil and Gas, by C. V. Beck. An analysis of heat values and efficiency reprinted from the Mid-West Coal Retailer. 16 p. Pub. by Mid-West Coal Retailer, Chicago, Ill., 25 cents.

Cotton Fabrics and Their Uses (Revised Edition), prepared by Textile Division, U. S. Department of Commerce. Railroad uses of cotton fabrics listed on pages 29-30. 45 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., 5 cents.

Henry Villard and the Railways of the Northwest, by James Blaine Hedges. The author is Professor of American History in Clark University. "No effort has been made to write a biography of Henry Villard . . . the writer has sought, by placing Villard in the proper setting, to make clear the factors which so largely shaped and conditioned the course of railroad development in the Oregon country . . . For the statements and views found in these pages . . . the writer alone is responsible." Preface. This volume is the sixth to be published by the Yale Press on the William McKean Brown Memorial Publication Fund. 224 p. Pub. by Yale University Press, New Haven, Conn., $3.

Periodical Articles

Electricity Versus Steam, by L. B. N. Gnaedinger. " . . . Today on the steel rails giants with metallic vitals are met in a contest where voltage and boiler pressure, ampere and thermal unit, will decide supremacy . . . The race is extremely close . . . " p. 63. "Into this battle of steam against steam and steam against electricity has been introduced a contestant of new and uncertain potentiality. This is No. 9000 of the Canadian National Railways . . . the largest oil-electric locomotive in the world . . ." p. 68. Illustrated. World's Work, November 1930, p. 63-68.

Ordeal by Bus, by Raymond S. Tompkins. "The railroads, barging along all these years, have been developing their service on the theory that what the traveling public wants is more and more comfort. But after contemplating some long bus trips across this country, and the droves of Americans who keep on taking them in spite of everything, one feels that it is easy to go wrong on this theory." p. 268. "When a bus line gets big enough it goes in for bus terminals whose luxuries are calculated to rival the delectable retreats of bronze and marble provided by the railroads . . . Terminals mean permanency and the chief bugaboo of the bus business is impermanence. Rails, yards, shops, huge passenger depots, these give an appearance of stability to the railroad business, but a bus line without a terminal is just a lot of buses that in five years or so will be worn out." p. 271. American Mercury, November 1930, p 267-275.

Railroad Electrification, by Francis H. Shepard. "Railroad electrification in the United States is entering into an era of increased activity." Scientific American, November 1930, p. 360-362.

This Giant That is New York, by Frederick Simpich. A profusely illustrated article on modern New York City with an interesting summary of transportation requirements. "One ocean ship and four long freight trains every twenty minutes of daylight." p. 533. Illustrations include an interior view of Grand Central Terminal and a picture of workmen climbing to top of New York Central Building. National Geographic Magazine, November 1930, p. 517-583.

A Unique Experiment—The Port of New York Authority, by Abbot Low Moffat. "In the matter of co-operation lies the whole crux of the freight problem of the metropolitan region." p. 579. North American Review, November 1930, p. 566-574.

Odds and Ends of Railroading

Twins in Engine Cab

ROLLA, MO.

TO THE EDITOR:

About a week ago, a pair of twins formed the engine crew of the Hot Springs Special of the Missouri Pacific from St. Louis, Mo., to Poplar Bluff. C. W. Speck was the engineman and his twin brother, J. B. Speck, was the fireman.

W. B. FLETCHER.

Clipper Mileage

George Freistedt, dean of barbers of the Golden State Limited, probably holds the record for long distance travel between Chicago and Los Angeles, having traveled in the last seven years 1,557,696 miles, or a distance equal to 62 times around the world. George has "barbered" many noted people during his run on this train, including former President Taft, Wm. G. McAdoo, and others.

Still More Mayors

NASHVILLE, TENN.

TO THE EDITOR:

At least five N. C. & St. L. employees are mayors in their respective towns. W. R. Holland, agent at Lexington, Tenn.; O. B. Hunter, agent at Boaz, Ala.; D. T. Buchanan, operator at Fayetteville, Tenn.; A. E. Hall, operator at Huntingdon, Tenn.; and A. G. Lowe, brakeman, residing at Bruceton, Tenn., are all actively serving terms as mayors at this time.

ROBERT S. HENRY,
Assistant to the Vice-President, Nashville, Chattanooga & St. Louis.

The S. P. Car Ferry

NEW YORK

TO THE EDITOR:

In connection with the retirement of the car ferry "Solano" following the opening of the Suisun Bay bridge on the Southern Pacific, the following facts may be of interest. The "Solano" made her trial trip on November 24, 1879, and went into service between Port Costa, Cal., and Benicia on December 28 of the same year. Her cost was $300,000 and equipment $5,000. My first trip on the "Solano" was in the summer of 1880 when, as a small boy, I left the East for California.

C. E. GRAHAM.

Indian Engineer

The Buffalo, Rochester & Pittsburgh is another railroad enjoying the distinction of having among its engineers a full-blooded Indian. Hawley Pierce, a member of the Seneca nation of the Iroquois Confederacy, has been employed by that company since 1907, and has been running a locomotive since 1913. Most of his work is on freight locomotives operating over the Middle division between East Salamanca, N. Y., and Buffalo. Born at Irving, N. Y., Pierce attended the famous old Indian college at Carlisle, Pa., and while there played tackle and fullback on Carlisle's football team of 1899.

The Dollar Came Back

If you are one of those hard-boiled persons who contends that corporations have no souls, here is a bit of evidence to the contrary. Among the visitors in Jackson on the final day of the state fair was Miss Nan Nevinger, member of the student body of Whitworth College at Brookhaven. Miss Nevinger returned to the college on No. 3, the southbound Illinois Central train leaving here shortly after three o'clock. Miss Nevinger was getting her things together as the train neared Beauregard, preparing to disembark. A dollar bill dropped from her hand, and a draft of wind carried it out of an open window. A dollar isn't much, of course, but nobody likes to have Uncle Sam's currency snatched away by vagrant breezes. Miss Nevinger reported her loss to Conductor Hales, who promptly set the machinery of a great common carrier in operation. A telegram was sent to the agent at Hazlehurst, and a few minutes later section hands were looking up and down the track for that missing dollar. It was finally found and returned to the owner. Little incidents such as these explain why the Illinois Central is the most popular corporation in the commonwealth—popular with everybody except tax-gatherers, fee grabbers, and professional damage suit lawyers. —Jackson (Miss.) Daily News.

Gets Day's Wages for Work Done 19 Years Ago

Pennsylvania officers at Toledo, Ohio, are still discussing a case that bobbed up recently, which, they say, proved that one locomotive fireman has a long memory and that railroad records apparently never perish. In 1911, P. D. Hough worked one day on the Toledo division as a fireman and then left the company's service, without bothering to leave a forwarding address. After 19 years, he returned to Toledo and turned in a claim for one day's wages due him. Clerks were set on the trail and, after checking many files, they found that pay for one day's work was actually due him. Hough received a check for $2.75.

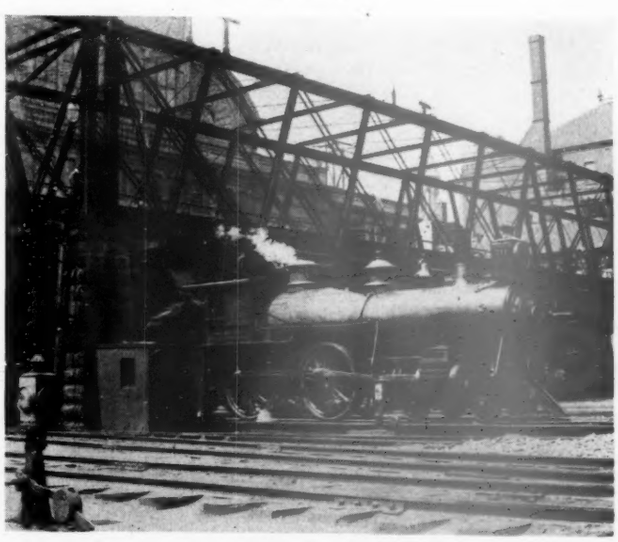
Eggs

The Baltimore & Ohio Magazine reprints the following item from the American Motorist: "On its beautiful Colonial dining cars, the Baltimore & Ohio has a blue china table service, on the edges of which are inscribed important events in the life of the railroad. All right, perhaps, from the standpoint of the company, but the other morning our fried eggs were served on a plate which carried the startling inscription, 'Laid in 1826'."

The editor of the magazine was more than equal to the occasion, however, and loyal to his road as well, for he replied to the quotation as follows: "In order to clarify all our statements, we shall have a new inscription made on our blue china plates, to this effect:

"The date on your plate,
We're delighted to state,
Refers to the rail on the border,
Your Omelet was made,
From eggs freshly laid,
By our hens who awaited your order."

* * *



A New Haven Locomotive at Grand Central Terminal, New York, in 1895

NEWS

Collection and Delivery Advocated for New York

Chamber of Commerce endorses truck service—Railways continue studies

The Chamber of Commerce of the State of New York at a meeting held November 6, adopted a resolution endorsing the principle of store-door collection and delivery of carload freight in New York City. The resolution expresses the hope that "carriers and local organizations representing merchants will continue their joint studies and investigations of the New York freight handling situation in an effort to bring about a satisfactory method of such direct collection and delivery service as applied to carload merchandise freight and will actively continue their efforts until such a method has been evolved."

This resolution is the second recent statement from New York business interests on store-door delivery. On September 21 the Shippers' Conference of Greater New York, the Merchants' Association of New York, the Publishers' Association of New York City and the Chamber of Commerce of the Borough of Queens joined in a letter to railway executives urging the latter to adopt a coordinated trucking service. The full text of the letter which was signed by W. H. Chandler, chairman of the Shippers' Conference and Manager of the traffic bureau of the Merchants' Association, appeared in the *Railway Age* of October 4, page 703.

Meanwhile the presidents' conference committee of trunk line executives has received the report and recommendations of its sub-committee which had been studying the subject since August, 1929, when the Interstate Commerce Commission's decision in the "constructive and off-track stations" case permitted the carriers serving New York to cancel their "constructive" station tariffs and to limit the practice of trucking in lieu of lighterage to interchanges of freight between railroads or between railroads and steamship lines. Upon receiving the recommendations of its sub-committee the presidents' conference committee turned the report over to the operating and traffic executives of the lines serving New York. Thus the matter now rests awaiting the results of these operating and traffic officers' studies of the report.

The full text of the resolution adopted by the Chamber of Commerce of the State of New York follows:

If you use your automobile for that business trip or week-end excursion which you are planning, you are 13 times more likely to be killed than if you travel by train.

—Massachusetts Governor's Committee on Street and Highway Safety.

Whereas, This Chamber on May 1, 1930, adopted a report endorsing the project of the Port Authority for a Union Inland Freight Terminal on the West Side as an initial and very important step towards plans for improving freight handling conditions within the Port of New York, the success of which would be materially aided by a direct collection and delivery service; and

Whereas, The prevailing general, if not universal sentiment, among merchants within the New York district is to the effect that carriers should arrange to adopt and operate some form of direct collection and delivery service for carload freight to the end that the benefits may be restored which were enjoyed by merchants previous to September 25, 1929, when constructive station service operations were terminated in pursuance of authority of the Interstate Commerce Commission; and

Whereas, The direct handling of carload freight between rail heads of carriers and places of business of shippers and receivers of freight, will not only relieve pier facilities to that extent, but also relieve merchants of the annoying and expensive practices of public loaders, and the removal from piers of less than carload freight by the handling of same through a Union Inland Freight Station to be constructed by the Port of New York Authority will tend to release piers for use by ocean going steamships; and

Whereas, It is understood that the Special Committee of the Presidents of the New York Railroads, working in conjunction with various organizations representing merchants have made considerable progress toward the development of some form of direct collection and delivery service to apply to carload merchandise freight; therefore, be it

Resolved, That the Chamber of Commerce of the State of New York, believing that the methods of handling freight within the New York district should be modified in such a way as to minimize the demands upon the already congested public thoroughfares, to relieve merchants of the necessity of delivering and receiving their shipments at pier stations so that the piers may be released for other purposes for which there is need, and to provide for delivery and receipt of freight at the lowest practicable costs to both carriers and merchants under prevailing conditions, having endorsed the plans under consideration for the construction of a Union Inland Freight Terminal by the Port Authority, does hereby endorse in principle the development of further plans and facilities for the handling of a substantial part of carload merchandise freight transported to and from New York directly between the rail heads of the carriers and places of business of shippers and receivers of freight; and, be it further

Resolved, That the Chamber expresses through this medium the hope that carriers and local organizations representing merchants will continue their joint studies and investigations of the New York freight handling situation in an effort to bring about a satisfactory method of such direct collection and delivery service as applied to carload merchandise freight and will actively continue their efforts until such a method has been evolved.

Santa Fe To Inaugurate Three-Class Fares Jan. 1

New passenger rates will be in effect for period of six months

The Atchison, Topeka & Santa Fe will place in effect on January 1, for a period of six months, additional one-way fares to and from California and the Middle West, which will establish on that road virtually three classes of one-way transcontinental passenger fares. The first-class rate is based upon a fare of approximately 3.6 cents per mile for the short route, as at present, and allows the customary use of standard sleeping cars upon the payment of the regular charges for the space occupied.

The second-class rate constitutes the distinctive feature of the new fares, and is based upon a rate of approximately 20 per cent less than the first class rate, or about 3 cents per mile. It permits passengers to make use of tourist sleeping cars but not standard sleeping cars. The third-class rate is about 40 per cent less than the first-class rate, is comparable to the coach rates which are now in effect on various transcontinental railroads, and provides a rate of approximately 2.3 cents per mile. This class of ticket is honored only in coaches and chair cars.

When the total fare, including the railroad and the sleeping car rate for the first two classes, and the railroad rate alone for the third class, is combined it will establish a first-class rate between Chicago and California of $103.47, a second-class rate of $77.75, and a third-class rate of $50, the latter being less than half the cost of the first class.

Between Chicago and California and intermediate points in Arizona to which the present rate would be higher than the new rate, the railroad fares for the three classes are respectively as follows, without the inclusion of sleeping car fares: $79.84, $65 and $50. Between Kansas City, Mo., and California the fares are: $63.60, $53 and $40, while between St. Louis, Mo., Memphis, Tenn., and New Orleans, La., and California the fares are: $73.34, $60 and $47.50. The same fares will apply eastbound from California and Arizona points to Colorado and the East. The tourist sleeping car fare under the second-class rates will be $12.75 between Chicago and California, as compared with $23.63 for standard sleeping car accommodations in a lower berth as at present.

(*Continued on page 1060*)

A. W. Thompson, Former B. & O. Executive, Dies

Had been prominently identified with railway and public utility fields

Arthur W. Thompson, financier and former vice-president of the Baltimore & Ohio, died in the West Pennsylvania Hospital at Pittsburgh, Pa., on November 9, at the age of 55 years. Death was due to an infection of the heart, with

Arthur W. Thompson

which he was stricken at his home near Ligonier, Pa. Mr. Thompson, who, at the time of his death, was a consulting engineer, has been prominently identified with the railway and public utility field during the past quarter century. He was born at Erie, Pa., on May 8, 1875, and educated at Allegheny College, Meadville, Pa., from which he was graduated with the degree of C. E., in 1897.

He began his railroading experience while still in college, serving during summer vacations on location work as rodman with the Pittsburgh, Bessemer & Lake Erie, and in the shops of the Erie at Meadville. Following graduation he served for a year as draftsman for Wilkins & Davison at Pittsburgh, then for a few months as instrumentman with the Pittsburgh & Lake Erie, and after that as chief of a party on surveys for the Baltimore & Ohio. He was next with the latter road from 1900 to 1918, serving successively as: assistant division engineer at Pittsburgh, 1900-1901, division engineer at Cumberland, Md., 1901-02, and at Pittsburgh, 1902-03, superintendent at Cumberland, 1903-04, and at Wheeling, W. Va., 1904-07. In 1907 he became chief engineer of maintenance of way, Baltimore & Ohio, Baltimore, Md.; in 1910 he advanced to chief engineer, which office he held for about eight months, when he was appointed general manager. In 1912 he became third vice-president in charge of operations and in 1916, vice-president in charge of traffic and commercial development. During the early part of 1918 he was vice-president in charge of operations, traffic, engineering and commercial development. On June 1, 1918, he was appointed federal manager for the following railroads: Baltimore & Ohio (Eastern Lines), Western Maryland, Cumberland & Pennsylvania, Cumberland Valley Railroad, Coal & Coke Railway, Wheeling Terminal Railway and Staten Island Lines, New York, with headquarters at Baltimore, Md.

Mr. Thompson in 1919 left the railroad service and entered the utility field as president of the Philadelphia Company and affiliated corporations. In 1926 he went to Philadelphia as head of the United Gas Improvement Company, and remained in that post until January, 1929.

Since then he had been a consulting engineer, with offices in Philadelphia. At the time of his death he was a director of the Missouri-Kansas-Texas, the P. C. C. & St. Louis, the Consolidated Gas Company and the Electric Power and Light.

U. C. & D. In Pittsburgh

The new freight station of the Universal Carloading & Distributing Company at Pittsburgh, Pa. (erroneously located in a previous news item) is situated at West General Robinson street and Shore avenue, North Side, the site of the old Exposition ball park. This fireproof freight house, built at a cost of about $500,000, is 600 ft. long and 58 ft. wide. There is a 200 ft. open platform, 40 ft. wide, and there are steel canopies both on the track side and the truck side for the protection of freight in wet weather. The steel rolling doors are each 25 ft. wide, each door being arranged to accommodate four trucks at one time.

New C. N. R. Offices Opened in New York City

Facilities house passenger, press, industrial and resources departments

The Canadian National on November 10 opened its new offices at 673 Fifth Avenue, New York (at Fifty-third Street). The new quarters are designed to house representatives of the company's passenger, press, industrial and resources departments. As a center of Canadian enterprise in the heart of the American metropolis and located on its exclusive retail shopping thoroughfare, it was essential that the structure be designed in keeping with its surroundings and the magnitude of the railway and the Dominion it serves. The passenger clientele catered to, also, by reason of the long-haul and resort features involved, is primarily composed of persons of relatively high incomes, to whom an effective sales appeal requires attractive surroundings.

The new offices show careful consideration to all these requirements. The first two floors of the building were entirely remodeled. The main booking offices, on the street floor, entrance to which is had through a vestibule of bronze and marble, are designed in the style of the XVIIIth Century English period in the character of a drawing room in a private English manor house with walls of large panels of English and American oak and a teakwood floor inlaid with ebony strips. An effect of daylight within this office is obtained in the side walls by means of artificial curtained windows illuminated by reflector lights back of the glass. A marquise protects the entrance from the street.

The Main Ticket Office—Tickets Are Kept in a Closed Cabinet Along the Left Wall

Concealed Lighting Gives Prominence to This Dignified, Though Compelling, Display

On it are painted in full heraldic colors the coats of arms of the Dominion of Canada and of each of the Provinces forming the Dominion.

The facade of the building on both Fifth avenue and Fifty-third Street has been remodeled in the style known as "modernistic," but without the usual exaggerated features of this style. Large window surfaces of plate glass and carved glass, set in bronze frames separated by gray marble piers, extend the entire height of the two stories. All this glass work is illuminated at night by concealed flood lighting so that the design of the glass is brought into relief and the displays—paintings of Canadian scenes—are fully illuminated.

The business offices are located on the second floor and a private elevator with specially designed oak panels and bronze doors opens from the booking office to serve the upper floor. In the basement a motion picture projection room is provided so that prospective patrons may be given visual representation of portions of the Dominion which they may desire to visit.

Railway Employment Statistics

The number of railway employees at the middle of September, as reported to the Interstate Commerce Commission, shows a further reduction to 1,485,906, a decrease of 14.98 per cent as compared with last year.

N. Y. Barge Canal Traffic

The New York State barge canal system reports that thus far this season, up to November 2, the freight carried by the boats on its waters totals 3,315,919 tons; which is 672,523 tons more than the record for the same period last year.

Cab Signals on 2800 Miles

The Pennsylvania has completed the installation of cab signals on its Pittsburgh Division, Altoona to Pittsburgh, 110 miles. The total length of its tracks on which the cab signal system is now in operation (including lines on which automatic train control has been installed by order of the government) is 2800 miles.

Reconsideration of Grain Rate Case Asked

The Chicago Board of Trade and the Chamber of Commerce of Milwaukee have petitioned the Interstate Commerce Commission for a reconsideration of the western grain rate case.

Mountain Time Zone Extended

The Interstate Commerce Commission has issued an order excepting a portion of the line of the Los Angeles & Salt Lake from Caliente to, but not including, Las Vegas, Nev., from the Pacific time zone and including it within the Mountain time zone for operating purposes.

C. & N. W. Surgical Association

At the annual meeting of the Surgical Association of the Chicago & North Western held at Chicago on November 6, Dr. Waltman Walters of Rochester, Minn., was elected president. The other officers elected are Dr. Joseph Smith, Wausau, Wis., vice-president; and Dr. C. W. Hopkins, Chicago, secretary-treasurer.

C. & N. W. Suburban Traffic

Chicago suburban traffic on the Chicago & North Western showed an increase of over 10 per cent between 1926 and 1929, the number of suburban passengers carried in 1926 being 20,263,250; in 1927, 20,318,383; in 1928, 21,169,607 and in 1929, 22,424,728. In the first eight months of the present year the gain is nearly one per cent as compared with the same months a year ago. Approximately 18,000 people now ride on 42 North Western suburban trains between the hours of 7:45 and 8:45 a. m. daily, while in the afternoon between the hours of 5 and 6 p. m., 43 trains carry approximately 22,000 people homeward. Sixteen terminal tracks are now required to dispatch the suburban trains as compared with eight four years ago.

Investigation of B. & O. Coach Services Refused

The Interstate Commerce Commission has denied the petition of the Pennsylvania for an investigation of the practices of the Baltimore & Ohio in the transfer of passengers to, from, and through New York City and Newark, N. J., by motor coach. Since the filing of the petition the B. & O., at the suggestion of the commission, has filed a tariff covering its motor coach operations.

Further Fare Reduction in Texas

The Texas-Mexican has applied to the Railroad Commission of Texas for permission to establish two cents a mile as the passenger rate between all stations on its lines between Laredo, Tex., and Corpus Christi. This action follows that of the Texas & Pacific which was recently granted permission to reduce its passenger fare from 3.6 cents a mile to two cents a mile between Ft. Worth and Big Springs.

Grade Crossing Accidents Reduced

Reports for the first seven months of this year, filed by the railroads with the Interstate Commerce Commission, show decided improvement in the highway crossing accident situation. Fatalities totaled 1,106, a reduction of 199 compared with the first seven months of 1929; number injured 3,004, a reduction of 553. In July alone, there were 144 fatalities, a reduction of 41; number injured, 319, compared with 526.

J. C. Gibson Joins Law Firm

Jonathan C. Gibson, chairman of the recapture board of the Interstate Commerce Commission, has resigned to become a member of the law firm of Olcott, Holmes, Glass, Paul & Havens, 170 Broadway, New York City. Mr. Gibson's resignation became effective November 1; he had been chairman of the recapture board since July, 1929, and previously he had been a member of the valuation board of review of the Interstate Commerce Commission.

Pennsylvania Tracing Bureau in Chicago

The Pennsylvania, in order to expedite the movement of carload freight, has established a central tracing and reconsignment bureau in the Chicago Union Station under the supervision of A. F. McSweeney, superintendent of freight transportation, and R. W. Cooke, general freight agent. This bureau is open 24 hours a day, Sundays and holidays included, and answers promptly all shippers' communications concerning the expediting, tracing and reconsigning of carload shipments moving within or through the western region.

The principal yards, being in direct communication with the new bureau, transmit by teletype the train symbol,

time of departure, etc., of all loaded cars, as well as empty tank and refrigerator cars. Reports reach the bureau within 30 minutes after a train is dispatched.

Medal for C. N. Murray

The Carnegie Hero Fund Commission has awarded a bronze medal and the sum of $1,000 to C. N. Murray, Kansas City, Kan., in recognition of his heroism in saving Mrs. Flossie M. Comstock from drowning in the Kaw river at Kansas City on December 20, 1928. Mr. Murray is a member of the bridge and building forces of the Rock Island and, while working on the west end of the Kaw river bridge, saw the woman fall into the river and plunged in to rescue her.

M.-K.-T. Repairs Chargeable to Suspense Account

The Interstate Commerce Commission has granted authority to the Missouri-Kansas-Texas and the M.-K.-T. of Texas, similar to that recently granted the Chicago & North Western, to enable it to charge to suspense account approximately $200,000 to be expended in heavy repairs to equipment not in service during December, to relieve the unemployment situation, and to charge this sum to operating expenses when the equipment is returned to service.

Engines Run Through Between Boston and Montreal

The Boston & Maine, in co-operation with the Canadian Pacific, now runs locomotives through between Boston and Montreal, 338 miles, on two express trains, the Red Wing and the Alouette. Locomotives of the two roads will alternate on these runs. The Boston & Maine delivers these trains to the Canadian Pacific at Wells River, Vt. The B. & M. also runs locomotives through in conjunction with the Central Vermont and the Canadian National, between Boston and Montreal.

Increased Expenditure for Waterways Urged

Increased appropriations by Congress for the development of inland waterways, particularly the Mississippi river system, were urged by a delegation representing the Mississippi River Association, headed by W. R. Dawes, of Chicago, that called on President Hoover on November 10. It was pointed out that Congress had appropriated $67,000,000 for this purpose last year and the committee urged an addition to this amount to the extent of the financial condition of the Treasury.

Washington Clerks Combat "Unfair" Competition

Members of the Brotherhood of Railway Clerks throughout the state of Washington held a meeting at Seattle, September 15, and organized the Railway Employes' Protective Association.

An account of the meeting in the November issue of "The Railway Clerk," official journal of the union, stated that the purpose of this Washington organization "is to promote the business of steam railways and work for legislation to regulate motor trucks and buses, thereby removing the present unfair competitive advantages this form of transportation has over railways." The organization is state-wide; railway employes from Yakima, Pasco, Wenatchee, Everett and other points attended the meeting.

Railway Club Meetings

The Southern & Southwestern Railway Club will hold its next meeting on Thursday, November 20, at the Ansley Hotel, Atlanta, Ga., beginning at 10 a. m. John L. Bacon of the Valve Pilot Corporation, New York City, will speak on the locomotive valve pilot. The annual election of officers comes at this meeting.

The New York Railroad Club will hold its next meeting and election of officers on November 21, in the auditorium of the Engineering Societies building, 29 West Thirty-ninth Street, New York City. The program designates this meeting as "Electrical Night" and schedules a paper on "The Contribution of Modern Electrical Equipment to Transportation," to be presented by H. L. Andrews, chief engineer of the transportation department, General Electric Company at Erie, Pa. Introductory remarks will be made by W. B. Potter, formerly chief engineer of the transportation department of the General Electric Company. Motion pictures will also be included.

UNION TANK CAR COMPANY
134 North LaSalle Street
Chicago, Illinois

L. J. DRAKE
President *October 25, 1930*

Capt. J. F. Lucey,
President, Lucey Petroleum Co.,
Magnolia Building,
Dallas, Texas.

Dear Captain Lucey:

As I have been very desirous of being helpful in relieving the present depression, I am discussing with associates the following plan, with the idea of putting it into effect at an early date.

In checking over inventories in store-rooms at our various repair shops I find that the supply of materials needed for repairs to our cars has been reduced to a minimum and it is intended to offer the Manufacturers orders for six months—material to be paid for when deliveries are made. We will, however, ask the Manufacturers to guarantee us against any decline in price for the coming six months.

I believe if this plan was followed, as applied to certain materials consumed by the railroads and other large users of supplies, it would have a very beneficial effect on Foundries and Manufacturing Plants and give employment to a great number of men.

I am passing this thought on to you for what it may be worth, feeling that the people at Washington, if they have not already considered it, may see in it benefits to be derived in the present situation.

With kind regards, I am

Sincerely yours,
L. J. DRAKE.

Portland Rose Made Faster

The Chicago & North Western and the Union Pacific, following the reductions made by the Great Northern, the Northern Pacific and the Chicago, Milwaukee, St. Paul & Pacific in passenger train schedules between Chicago and the northwest Pacific coast, have cut 3¼ hr. from the eastbound schedule of the Portland Rose and 1¼ hr. from the westbound schedule, beginning November 9. With this reduction, the Portland Rose will operate from Portland to Chicago in 57½ hr., as compared with a 58 hr. schedule which the Great Northern and Milwaukee placed into effect between Seattle and Chicago. The schedule of the Portland Rose from Chicago to Portland is 59½ hr., as contrasted with the 59¾ hr. schedule of the Great Northern and the Milwaukee between Chicago and Seattle. The Portland Rose now leaves Chicago at 10:15 p. m. instead of 9:15 p. m. and arrives in Portland at 7:45 a. m. on the fourth day instead of 8:00 a. m. Eastbound the train leaves Portland at 9:30 p. m. instead of 6:00 p. m., arriving in Chicago at 9:00 a. m. the fourth day instead of 8:45 a. m. This reduction in the running time of the Portland Rose represents a cut of 10½ hr. eastbound and 8½ hr. westbound in the last 18 months.

Commercial Stocks of Coal

Commercial stocks of bituminous coal used largely for industrial purposes amounted to 35,900,000 tons on October 1, 1930, according to the quarterly survey just completed by the United States Bureau of Mines, Department of Commerce. In comparison with the amount on hand at the beginning of the previous quarter, this is an increase of 3,700,000 tons but it is 1,600,000 tons less than the quantity in storage on the same date last year. Exports during the third quarter of 1930 averaged 382,000 tons a week, as against 410,000 tons during the same period last year. The weekly rate of consumption within the United States during the third quarter amounted to 7,370,000 tons, as compared with 7,614,000 tons in the previous quarter. In comparison with the same period last year, the rate of home consumption plus exports shows a decrease of 1,371,000 tons per week, or 15.0 per cent.

In addition to the stocks in the hands of consumers there was 9,804,000 tons of bituminous coal on hand on the docks of Lake Superior and Lake Michigan on October 1, as compared with 7,883,000

tons on July 1. Stocks of anthracite in retail yards on October 1 show the usual seasonal increase over the amount in storage on July 1 and are also greater than on the corresponding date of last year.

City to Contest Abandonment of Whitestone Line

Following the announcement of the Interstate Commerce Commission's decision to permit the Long Island to abandon its Whitestone branch, reported elsewhere in this issue of *Railway Age*, Mayor Walker of New York City and William G. Fullen, chairman of the city Transit Commission, are preparing to institute legal proceedings to force a review of the ruling. In commenting on the decision and on the stipulation that the railroad must establish motor coach service before actually abandoning the branch, both Mayor Walker and Mr. Fullen were reported as saying that the matter was one over which the Federal government had no jurisdiction, as the line was intrastate and intracity; that Federal authorities had no power to establish motor coach lines within municipal limits, and that the ruling was "a direct invasion of state's rights."

The method of legal procedure which it has been suggested that the city may follow is to obtain a writ of certiorari from a Federal district court in the District of Columbia, on which the findings of the commission may be reviewed.

Civic organizations representing commuters and property owners in the four Queens County communities served by the Whitestone line also came out in opposition to the abandonment, suggesting that the city accept the Long Island's offer to turn over to it the four-mile right-of-way for use as a unit in the municipal rapid transit system. This proposal, however, has been held by the city administration to involve too high a cost.

An official statement by George LeBoutellier, vice-president of the Long Island, said that his company would be "guided by the best wishes of the city" in inaugurating motor coach service along the Whitestone route, or that the railroad "will be glad to consider the question of the city taking over the branch."

Canadian Railways Acquire Air Line Interest

Canada's two railways and predominating airway companies have united to form a comprehensive transportation system. Endorsement of this formidable scheme has been given by the Dominion Government, which last week set its seal to an order-in-council enabling the Canadian National to participate with the Canadian Pacific, Western Canada Airways, Limited, and the Aviation Corporation of Canada in the formation of a large company to be known as Canadian Airways, Limited.

Each railway will subscribe $250,000 of the capital involved, which amounts to a total of 200,000 shares of no par value. Their contribution at the present time is very small, but it is expected they will take advantage of the offer extended to increase their financial holdings after the company is in full operation. Half-a-million dollars will thus be supplied jointly by these two railway companies. Although the trend of this financial merger was indicated nearly four months ago by the Montreal Gazette, no real advance could be made until permission was obtained for the nationally-owned railway to co-operate with three private companies.

James A. Richardson, who is president of this new corporation, has proceeded with his organization and the establishment of head offices in Montreal. Both Liberal and Conservative Cabinets gave the scheme their approval, but the pressure of an election campaign and subsequent Government business delayed due consideration and the final endorsement until the end of this week. Sir Henry W. Thornton, chairman of the Canadian National Railways, and Edward W. Beatty, chairman of the Canadian Pacific Railway, have consented to become joint vice-presidents.

The name Canadian Airways was selected as the title for this new company by reason of its national character. Until now it was one of several organizations composing the Aviation Corporation of Canada, the others being Interprovincial Airways, Limited; International Airways Limited; Canadian Transcontinental Airways, Limited; Maritime Airways, Limited; and Canadian Aerial Surveys, Limited.

G. R. S. Wins Patent Suit

The United States Circuit Court of Appeals for the Eighth Circuit, in the suit of the General Railway Signal Company against the Great Northern Railway, has handed down an opinion reversing the District Court for Minnesota, and sustaining the claims of the plaintiff under patent No. 1,551,515, granted August 25, 1925, to Winthrop K. Howe, assignor to the General Railway Signal Company, for an automatic train control system, and holding that the device of the Sprague Safety Control & Signal Company, as installed on a portion of the Great Northern, infringes the patent; and that a decree of infringement shall be entered.

Following an exhaustive discussion of the Howe and the Sprague engine apparatuses, and reviewing various other patents on automatic train control—Sprague, Jones, Barberie, Lydall, Fornia, Oler, Price, Bulla and Stephens—and going on to consider the question of infringement, the decision, written by Circuit Judge Stone says:

"Comparison is to be made having in mind that Howe entered a crowded field but that he first evolved a plan of centering all of his device upon a single electro-pneumatic valve (influencing the brake air line) and one main electric circuit controlling that valve where the brake setting, reset, holdoff forestaller and protective features all centered on that one circuit to actuate or prevent action of that valve. If such is the arrangement of defendant's device there is infringement—otherwise, there is not."

Reviewing the differences between the two systems, as related to each of the four features—brake-setting; reset; hold-off; protective—and observing that the only difference which attracts serious attention is the use of a secondary circuit, by defendant, in the operation of the reset and the hold-off, the decision concludes:

"We think the Howe patent is infringed by the device of appellee and that the decree should be reversed with instructions to set the decree aside, to enter a decree of infringement and to take such other and further action as is in support thereof."

On application of the railroad company a stay of sixty days has been granted.

Western Railroads Reopen Shops

Railroads in the Middle west have recently opened or made arrangements to open shops which have been temporarily closed during the period of reduced business. The Chicago, Rock Island & Pacific will return 2,100 men to the shops at Chicago, Silvis, Ill., Horton, Kan., Kansas City, Mo., Shawnee, Okla., and El Reno, Little Rock, Ark., and Fort Worth, Tex., when they are reopened at those points on November 17. The present plan is to retain these shop men during the last two weeks of November and probably the first two weeks of December, contingent upon the condition of business.

The Chicago & North Western shops throughout that system re-employed about 4,000 men on a three-days-a-week basis, on November 3. Some of the employees affected had been out of service since September 17. About 700 shop men were added to the forces of the Chicago & Alton shops at Bloomington, Ill., on November 3. On the St. Louis-San Francisco about 1,200 shop employees who had been taken out of service on September 22 were returned to work during the latter part of October and it was expected that they would be in service for the remainder of the year.

On the Cleveland, Cincinnati, Chicago & St. Louis, trainmen on a number of divisions have voluntarily accepted certain periods of temporary furlough each month to obviate the necessity of taking trainmen out of service more or less permanently during the depression.

Systematic Aid to Employees Out of Service

Solicitation of officers and employees for contributions to aid former employees who have been released from service during the present economic depression and are in temporary need has been undertaken by a number of railroads, including the Chicago, Burlington & Quincy; the Chicago & North Western; the Chicago, Milwaukee, St. Paul & Pacific; the Chicago, Rock Island & Pacific and the Pennsylvania.

The relief plan on the Rock Island has been in operation since October 22 and during the first two weeks contributions totaled about $35,000. In addi-

tion to the fund for former employees, the Pennsylvania is soliciting funds for charity organizations to be used in aiding unemployed outside of the railroad organization.

The relief organization established on the Milwaukee is typical of that in operation on each of the other four roads mentioned. Contributions solicited from each officer and employee of the railroad are deposited with the company treasurer, either in cash or by payroll deduction, and are administered by an executive relief committee which is headed by the vice-president in charge of operation. Other members of this executive committee include the first vice-president of the Milwaukee Road's Women's Club, the vice-presidents of finance and traffic, the chief purchasing officer, and the system general chairmen of the brotherhoods,—the car men, the clerks, the telegraphers and the maintenance of way men. In addition the organization will consist of terminal and divisional committees which will have as members, one or more representatives of the local labor unions and the division superintendent, master mechanic and the storekeeper.

These committees will make a survey of the needs of families and approve applications for aid when sponsored by the supervisory officer under whom the former employee last served. Supplies for distribution will be purchased at the lowest possible price by the Milwaukee's purchasing department and transported free over the railroad's lines.

On the Burlington the contributions to this fund will be made monthly until May 1, 1931, while on the Milwaukee the plan will be operative for five months, and on the North Western it will be in effect until such time as it is considered that the emergency has passed. The relief organization on the North Western includes a clothing committee in charge of the general claim agent, which will collect and distribute clothing, and a jobs committee in charge of three of the railroad's officers, which will act as an employment agency to provide work for former employees in other capacities than on the railroad.

Drought Rates Not to Be Continued

The railroads have decided not to extend beyond November 30, the emergency reduction in freight rates which was made for the relief of agricultural interests due to the drought. The following statement was authorized by eastern, western and southern railway executives on November 10:

"Protracted drought in the states of Alabama, Arkansas, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia, West Virginia and Wyoming, prompted the President of the United States to take steps to relieve the farmers in those areas whose crops had been destroyed and who were confronted with still further losses of livestock because of a lack of feed and water. As a major part of his program of relief, the President appealed to the railroads to make reductions of their rates on hay, straw, feed and water into, and livestock out of, these areas.

"It was apparent that immediate action was necessary to bring about such relief as was possible in order to prevent distress. The railroads willingly co-operated with the President in the relief program. This they did by promptly filing with the Interstate Commerce Commission tariffs which reduced rates on these commodities 50 per cent in Eastern and Southern territories and 33⅓ in the Western territory. These rates became effective in all territories the latter part of August; and October 31, 1930, was named as the date upon which they would expire. They were later extended to November 30.

"Under the plan adopted the Secretary of Agriculture assumed the responsibility of determining the limits of the drought areas and also of designating who in these areas were entitled to the benefits of the reduced rates. The Department of Agriculture functioned through the state drought relief committees and the county agricultural agents. Upon the latter has fallen to a large extent the difficult and trying responsibility of administering on the ground this emergency measure and seeing to it that the benefits reached those entitled to receive them.

"By November 30 more than 60,000 carloads will have been moved under the reduced rates. This represents an immense tonnage; probably greater than ever moved in any relief measures heretofore undertaken in this country. The revenue loss to the carriers from this traffic cannot now be ascertained but will certainly aggregate several millions of dollars; and such a drain on the revenues cannot longer be continued. This announcement is made at this time in order to remove any uncertainty as to the position of the carriers concerning a further extension of the emergency reduced rates."

Grain Rates to Maritimes

General dissatisfaction in the Maritime Provinces with the recent decision of the Board of Railway Commissioners refusing the application of the Halifax Harbor Commission for an adjustment of the freight rates on eastbound grain is certain to lead to an appeal. The appeal will be backed by practically all interests in the three provinces by the sea.

Nothing has yet been decided as to the form of the appeal, Col. E. C. Phinney, chairman of the Halifax Harbor Commission, stated in Ottawa last week. He declared, however, that the people of Nova Scotia were determined to fight the case through by every legal means at their disposal, and predicted the governments of the three provinces of Nova Scotia, New Brunswick and Prince Edward Island and the Maritime Chamber of Commerce, as well as the harbor commissions of Halifax and Saint John, would lend their weight to the effort to upset the ruling of the commission.

Prior to 1927, the freight rate on grain from the head of the Lakes to Halifax was 35.4 cents per hundred pounds, and the rate to Quebec was 34.5 cents. This gave the port of Halifax a rate only one cent greater than the rate to Quebec. Then in 1927 the rate to Quebec was reduced by order of the Railway Commission to 18.34 cents, and the rate to Halifax was left unchanged. Now Halifax wants a similar reduction which would make the rate 19.34 cents.

The argument advanced for the restoration of the one-cent differential in rates to Quebec and to the Maritime ports leads away back into history to the building of the trans-continental railway. This line, it is contended, was built by the government of Canada for the specific purpose of carrying Canadian export goods to Canadian ports for shipment abroad, instead of having them exported through United States ports.

With that object in view the freight rates were set at a level which would make transportation to Canadian ports as economical as to the ports to the south. It was on this principle that Quebec secured the reduction in rates in 1927, and on the same principle Halifax demands a similar reduction.

The demand for this reduction comes at a time when improvements are being made in the Halifax harbor. The new harbor commission is undertaking a complete re-organization of the port with a view to giving the maximum amount of service to a maximum amount of shipping.

In order to finance the completion of certain improvements to port facilities, which have already been undertaken, a loan of $5,000,000 has been secured from the Dominion Government. Very little new work will be undertaken at this time, but there are a number of partially completed projects which will be finished.

Argument in the application of the Maritime Transportation Commission of the Maritime Board of Trade for the interpretation of the Board of Railway Commissioners' order No. 366 of 1922, with respect to the movement of grain and grain products for domestic use was heard by the Dominion Railway Board at Ottawa last week. Alistair Fraser, general counsel of the Canadian National, spoke for both his own company and the Canadian Pacific, while Colonel Earle C. Phinney, chairman of the Halifax Harbor Commission, and F. C. Cornell, of Moncton, N. B., represented the Maritime viewpoint.

Reviewing the 1922 order, Mr. Fraser argued that it had been issued by the Board with a view to requiring certain arbitrary rates to be established "on commodities moving at class and commodity rates between points west of Port Arthur and Fort William and points east of Montreal." The aim of the order was to enable Maritime Province manufacturers to compete with those of Quebec and Ontario in the markets of Western Canada. The order had not intended to be applied to grain and grain products, inasmuch as the railways had already been required by Parliament to

make drastic sacrifices on the transportation of these commodities under the Crow's Nest Pass rates. Mr. Fraser gave a historical review of the eight-year-old railway problem. Grain, he said, had received more than its measure of protection from the railways, and, therefore, the Board had purposely excluded it from the application of order 366.

Mr. Phinney took issue with Mr. Fraser on this point. With respect to the limitations of the order, he argued that it had never been intended to apply solely to westbound movements and that movements eastbound also came within its scope. The whole record of the 1922 proceedings was bound up with every phase of the general rate structure, he said.

Slip Coaches Still In Use

The number of slip coaches now operating on the railroads of Great Britain is only 45, the practice having shrunk greatly from the year before the war, when 177 such cars were operated. If any young American is at all hazy as to the definition of the term "slip coach" he should be reminded that it is a passenger car attached to the rear of an express train and which, with its passengers, is detached from the train and stopped, at a way station, without the stopping of the train.

The decline in the use of this arrangement is said to be due to the cost of additional brakemen, the need for specially fitted cars and the increasing use of corridor trains, on which passengers may desire to pass from the rear car to the dining car. The Great Western still has 34 daily "slips," though before the war there were on this road 70 or more. The London, Midland & Scottish, on whose lines there were before the war 44 such cars, now has none at all.

Santa Fe To Inaugurate Three-Class Fares Jan. 1

(*Continued from page 1054*)

Stopover privileges will be allowed at all points on the new classes at which stopovers are now allowed on first-class tickets. The baggage allowance for the two new classes will be 100 lb.

Following the Santa Fe's decision, the Chicago, Milwaukee, St. Paul & Pacific announced that, beginning January 1 and continuing for a period of six months, it will try a three-fare plan to stimulate travel between Chicago and the Pacific Northwest. Tickets good in standard sleeping cars will be sold at the present fare, $77.21, plus the usual charge for space occupied from Chicago to Seattle, while two additional types of fares will be established. These will include one of $65 which will be honored in tourist sleeping cars upon the payment of the sleeping car rate and a fare of $50 which will be good in coaches. The rates apply in both directions between Chicago and Coast points and between the Twin Cities and North Coast cities.

Equipment and Supplies

Locomotives

THE VIRGINIAN is inquiring for 10 locomotive tenders.

THE CHICAGO, BURLINGTON & QUINCY is constructing 20 locomotives in its Denver shops, the order to be completed by December 31. These switching locomotives are of the 0-6-0 type, having a tractive effort of 44,300 lb., a 200-lb. steam pressure and a weight of 185,200 lb. In building these locomotives usable parts of old prairie type locomotives are being installed.

Freight Cars

THE NEVILLE CHEMICAL COMPANY, Pittsburgh, Pa., is inquiring for five tank cars of 10,000 gal. capacity.

THE VIRGINIAN has ordered 600 hopper cars of 55 tons' capacity from the Virginia Bridge & Iron Company.

THE STANDARD OIL COMPANY OF NEW JERSEY is inquiring for three tank cars of 3,000 gal. capacity and three tank cars of 6,000 gal. capacity.

THE BALTIMORE & OHIO will build 1,000 heavy service gondola cars in its own shops. These cars were previously authorized as reported in the *Railway Age* of October 25.

THE CHICAGO & NORTH WESTERN is constructing 100 trap cars and four flat cars, the former to be used for handling l. c. l. trailer trucks from Grand avenue and State street to its Proviso yard. Eighty-six of the trap cars have been constructed and the remaining 14 will be completed before the end of the year. The flat cars include two depressed center, 90-ton cars, one of which has been completed, and two special 200-ton flat cars which, with the remaining 90-ton car, will be completed before the end of the year.

Iron and Steel

THE ATLANTIC COAST LINE has placed an order for 18,500 tons of rail for 1931 delivery.

THE NORFOLK & WESTERN has ordered 1,700 tons of steel for bridges at Stanley, Va., and Rileyville from the Virginia Bridge & Iron Company.

THE PENNSYLVANIA has ordered 500 tons of steel from the Fort Pitt Bridge Works for electrification work at its Passaic river crossing at Newark, N. J.

THE INTERNATIONAL RAILWAYS OF CENTRAL AMERICA has ordered 1,400 tons of 70-lb. rail, accessories and tie plates from the United States Steel Products Corporation.

Signaling

THE NORTHERN PACIFIC has ordered from the General Railway Signal Company a table interlocker, type A, five units, for installation at Garrison, Mont. The order includes ten color-light signals and other material.

THE WABASH has ordered from the Union Switch & Signal Company materials for the installation of centralized traffic control from Peru, Ind., westward to State Line, 92 miles. Provision will be made for controlling the seven passing tracks between State Line and Lafayette, 37 miles; one end of the passing track at Delphi and one end of the track at Clymers. The control machine, located at Peru, will be made large enough to provide for the future addition of existing sidings between Lafayette and Peru. The intermediate signals will be arranged on the A. P. B. system. The order includes 15 dual-control switch and lock movements, 60 searchlight signals and other material.

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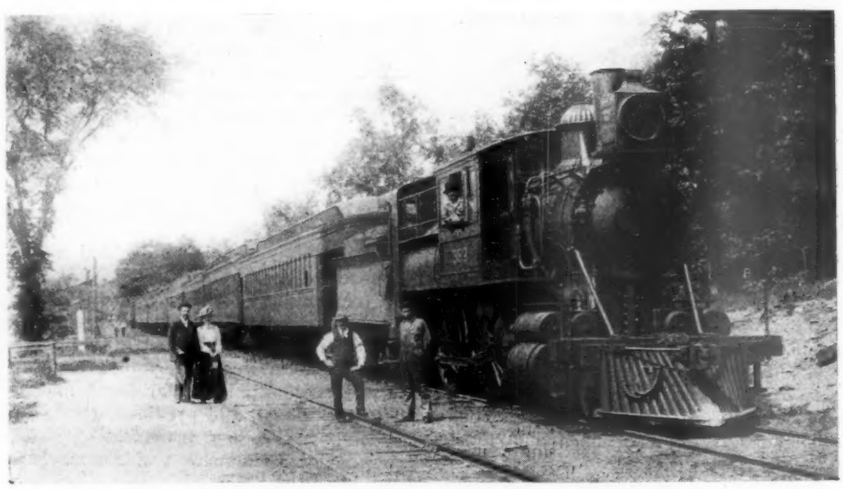

On the Erie 25 Years Ago

Train at Greenwood Lake, N. J. Vauclain Compound Locomotive No. 357. Engineman George McKinnon; fireman, Martin Munson; baggageman, William Oldfield.

Supply Trade

Edward J. Fagan, representative of the **Midway Railway Equipment Company,** Chicago, has been elected president to succeed **Eugene Weiss, Jr.,** resigned.

The General Motors Corporation, Detroit, Mich., has purchased the **Electro-Motive Company,** Cleveland, Ohio, and will operate the latter as a separate company with the same personnel.

The Federal Cement Tile Company, which has purchased the American Cement Manufacturing Company, as reported in the *Railway Age* of November 1, has merged the two companies under the name of the **Federal-American Cement Tile Company,** the officers of Federal becoming officers of Federal-American.

John T. Brennan, assistant vice-president in charge of sales of the **Greenville Steel Car Company,** Greenville, Pa., has been elected vice-president in charge of sales to succeed **Kenneth C. Gardner,** resigned. Mr. Brennan has been in the employ of the company for the past 15 years serving successively as purchasing agent and for the past several years as assistant vice-president in charge of sales.

The **Carrier Engineering Corporation** of Newark, N. J., the **Brunswick-Kroeschell Company** of New Brunswick, N. J., and Chicago, and the **York Heating & Ventilating Corporation** of Philadelphia, Pa., manufacturers of air conditioning, refrigerating and unit heating and ventilating equipment, have been consolidated. The merger, including subsidiary and affiliated concerns, unites fifteen companies, with total assets of approximately $15,000,000, and provides an organization equipped to produce any desired kind of atmospheric conditions in homes, office buildings, industrial plants, etc. According to the plans contemplated, each of the companies involved will retain separate entities under a holding company to be known as the **Carrier Corporation.** All research, direct sales and engineering activities for the group will be conducted through this corporation.

Employees of the **Inland Steel Company,** Chicago, have developed a plan for the relief of their fellow workers for whom no employment can be provided under present conditions by voluntarily pledging a portion of their earnings to a relief fund to which the company has agreed to contribute an equal amount. The contribution of the employees varies with their earnings from about two per cent to five per cent. Employees earning less than $125 per month have not been asked to contribute, except single men with no dependents. To distribute the money so collected, arrangements have been made to secure the service of trained social workers who will act as visitors and as advisors to the Central committee of the employees. The expense incurred in the distribution of the relief fund will be borne by some of the executives of the Inland Steel Company, thereby permitting all of the money contributed to be used for relief.

E. J. Blake, formerly engineer in charge of the car lighting section of the American Brown Boveri Corporation, Camden, N. J., has resigned to engage in private consulting engineering work with offices at 123 South Broad Street, Philadelphia, Pa. Special attention will be given to investigation and development of regulating and control systems, new devices, processes and manufactured products. Mr. Blake was born in Newark, N. J. He was graduated from Princeton University in 1901 and served his apprenticeship in the student courses of the Westinghouse Electric & Manufacturing Company and the General Electric Company. In 1904, he entered the electrical department of the New York Central and for ten years was engaged in a variety of work in

E. J. Blake

connection with the electrification of the New York Zone. In 1914 he entered the railway supply field as electrical engineer for the Hall Switch & Signal Company. Three years later he joined the Gould Coupler Company as electrical engineer and continued in this capacity until 1928 when the company went out of the car lighting business, at which time he became associated with the American Brown Boveri Company as general engineer in charge of car lighting, oil circuit breakers and miscellaneous apparatus. Mr. Blake is the inventor of a number of railway signals, automatic train control and car lighting devices.

Obituary

Henry Lang, vice-president of the **Ingersoll-Rand Company,** New York, died at his home in Montclair, N. J., on November 10, at the age of 66.

William Piez, European correspondent of the **Link-Belt Company,** with headquarters at Paris, France, died at Brussels, Belgium, on November 2, from pneumonia after a week's illness.

Construction

BALTIMORE & OHIO.—This company has awarded to the Empire Construction Company of Baltimore, Md., a contract for the construction of second track, culverts, grading and drainage facilities between Bruceton and Snowden, Pa., about two miles. This improvement is part of a project authorized several months ago, and reported in the *Railway Age* of June 7. The complete program involves a total estimated expenditure of $1,185,338, which includes the installation of automatic signals from Glenwood Junction to Gilkeson, Pa., 19.1 miles, and the installation of centralized train control from Gilkeson to Wheeling, W. Va., 42 miles, at an estimated cost of $680,058; and the construction of second track revision of main track and extension of passing sidings between Rand and West Alexander, Pa., at an estimated cost of $505,280. The latter expenditure involves the connecting of existing sections of double track between Rand and Gilkeson by constructing five miles of new double track between Bruceton and Finleyville, Pa. This will provide double track on this line for a total distance of 17 miles, with suitable intermediate passing sidings at six locations, and will reduce operating expenses and permit more efficient operation of Mallet locomotives between Wheeling and Pittsburgh, Pa.

BUFFALO, ROCHESTER & PITTSBURGH.—The New York Public Service Commission has approved plans and an estimate of cost amounting to $93,000 for the elimination of this company's Loveland road grade crossing on the Orchard Park-Griffin Mills county highway at Loveland station, Aurora, N. Y.

ERIE.—The Public Service Commission of New York has approved revised plans for the elimination of the King crossing of this company's tracks on the Nunda-Portageville connection highway, Portage, N. Y.

KANSAS CITY TERMINAL.—A contract for the construction of the superstructure of a 1,200-ft. viaduct over Oak street at Kansas City, Mo., has been awarded to the McClintic-Marshall Company, Chicago, at a cost of $95,000.

MISSOURI PACIFIC.—A contract for the filling of three bridges near Reeds Springs, Mo., involving about 500,000 cu. yd. of earth, has been let to A. Guthrie & Co., St. Paul, Minn.

NEW YORK CENTRAL.—Contracts have been awarded by this company to the Walsh Construction Company, Syracuse, N. Y., for the elimination of a grade crossing at Midler avenue, Syracuse, in connection with a general program of grade separation and station improvements in that city; to the Rockwood Sprinkler Company of Massachusetts, New York City, for the installation of a sprinkler

system on pier K, Weehawken, N. J.; and to the Hecker-Moon Company, Cleveland, Ohio, for the construction of signal station H at Black Rock, N. Y., in connection with grade crossing elimination work at that point. This company has also been ordered by the Board of Public Utility Commissioners of New Jersey to eliminate an existing grade crossing on the West Shore at Fort Lee road, Bogota, N. J. The Public Service Commission of New York has approved an estimate of cost of $61,600 for the reconstruction of the bridge carrying the New York Central over the Trenton-Prospect-Remsen state highway, Trenton, N. Y., and has made certain changes in its order providing for the elimination of the Main street and Graham crossings of the New York Central in Royalton, N. Y.

NORFOLK & WESTERN.—This company is building two new steel bridges, one at Stanley, Va., 720 ft. long, and the other at Rileyville, Va., 1,229 ft. long. The expenditure for both bridges will be about $160,000. The contract for fabrication of steel for the superstructures of these bridges has been awarded to the Virginia Bridge & Iron Company, Roanoke, Va.

NORTHERN PACIFIC.—The Interstate Commerce Commission, in accepting the proposed report of Examiner Haskell C. Davis, described in the *Railway Age* of September 20, has authorized this company to build and operate a branch line from Moclips, Wash., to a point on the north bank of the Hoh river about six miles northeasterly from Spruce, Wash., 59.44 miles, instead of via a route previously authorized by the commission from Aloha, Wash., to a point on the Hoh river, about 67 miles. The relocated route will connect with the Northern Pacific's existing line at the northern terminus of the latter, thus avoiding a spur operation between Aloha and Moclips, and will cost approximately $5,836,235, or about $735,000 less than the line originally proposed. The commission has also authorized the Oregon-Washington Railroad & Navigation Company to operate over a line of the Northern Pacific between Hoquiam, Wash., and Moclips, 26.5 miles.

READING.—Plans for the extension of its present electrification program from Langhorne, Pa., to West Trenton, N. J., 8.9 miles, have recently been announced by this company. This addition brings the total electrification work now authorized by the Reading to 69 route miles and 161 track miles, and the total cost to approximately $21,500,000.

TERMINAL RAILROAD ASSOCIATION.—This company closes bids on November 24 for the construction of a merchandise mart at St. Louis, Mo., which will consist of an eight-story reinforced concrete, brick and stone structure surmounted by a 20-story tower. The building will have a total floor area of 1,000,000 sq. ft. and outside dimensions of 330 ft. by 358 ft.

Financial

CHICAGO & ALTON.—*Sale.*—This company will be sold to the highest bidder at a public auction at the railroad's station at Wilmington, Ill., on December 11 at two o'clock in the afternoon, following an order issued by Herbert A. Lundahl, special master of the District Court at Chicago on November 12. The order provides for the deposit of $1,000,000 in cash or a larger amount in bonds by the prospective bidders for the entire property. The Alton has been in receivership since August 31, 1922.

CHICAGO GREAT WESTERN.—*Preferred Dividend.*—The directors of this company have declared a dividend of $1.00 a share on the preferred stock, payable January 7 to stockholders of record December 7, this being the first dividend authorized by the company since July, 1919. In spite of the decline in gross revenues, the company has effected economies to the extent that its net earnings for the first ten months are 12.5 per cent ahead of those of the same period last year.

JONESBORO, LAKE CITY & EASTERN.—*Conference Asked on Recapture.*—This company has filed with the Interstate Commerce Commission a motion that the commission grant it a formal or informal conference with Division 1 or the recapture board or other representative of the commission on the questions of fact and of fine conclusions involved in a proposed report on the inquiry as to whether or not the company received recapturable excess income during the period from March 1, 1920 to October 31, 1925. The property was acquired on the latter date by the St. Louis-San Francisco by purchase from R. E. Lee Wilson and associates under an arrangement by which part of the purchase price was withheld to cover outstanding liabilities, including the possibility of recapture, and they are anxious to arrive at a final settlement.

LONG ISLAND.—*Abandonment.*—The Interstate Commerce Commission has issued a report on reargument affirming its previous decision that public convenience and necessity permit this company to abandon a portion of its Whitestone branch, in Queens county, N. Y., 4.1 miles, but authorization to abandon was deferred pending the consideration and approval of arrangements for a substitute service for both passengers and l.c.l. freight to be provided by the company. Commissioners Aitchison, McManamy and Lee dissented.

LOUISIANA & ARKANSAS.—*Promissory Notes.*—This company has been granted authority by the Interstate Commerce Commission to issue, extend or renew promissory notes in varying amounts, aggregating at any time not exceeding $550,000. The order also permits the renewal from time to time, providing the last maturity date be not later than December 31, 1931, of an unsecured promissory note in the amount of $1,700,000, which will mature on December 31. First mortgage five per cent bonds now held in the L. & A. treasury may be pledged and repledged in amounts not exceeding $3,000,000 as collateral for these notes.

MIDDLE FORK.—*Acquisition.*—This company, recently organized, has applied to the Interstate Commerce Commission for authority to acquire from Moore, Keppel & Co., a line of railroad from Midvale to Cassity, W. Va., 13 miles.

MISSOURI PACIFIC.—*Unification Case.*—The Interstate Commerce Commission has assigned this company's application for authority to lease the property of 22 subsidiary and affiliated companies for oral argument at Washington on December 4.

MOBILE & OHIO.—*Notes.*—A syndicate composed of J. P. Morgan & Co., the First National Bank of New York and the National City Company, has closed its subscription books on the issue of $5,000,000 of this company's 5 per cent secured notes which mature in 1938. The issue was priced at 98½ to yield 5.2 per cent.

NORTHEAST OKLAHOMA.—*Acquisition and Reconstruction.*—The Interstate Commerce Commission has authorized this company to acquire and operate the lines of the Joplin-Pittsburg Railroad from Columbus, Kan., to Cherokee Jct., 15.8 miles, and from Scammon to Mineral, 5.6 miles, and to reconstruct and relocate about a mile of track in Columbus, Kan.

PERE MARQUETTE.—*Bonds.*—The Interstate Commerce Commission, at the request of the company, has dismissed its application of March 19, 1928, for authority for the authenication and delivery of $3,066,000 of first mortgage 5 per cent bonds.

PITTSBURGH & WEST VIRGINIA.—*Proposed Acquisition of W. & L. E.*—The Interstate Commerce Commission has assigned this company's application for authority to acquire control of the Wheeling & Lake Erie for oral argument at Washington on December 10.

Dividends Declared

Cleveland & Pittsburgh.—Guaranteed, $.87½, quarterly; Special Guaranteed, $.50, quarterly; both payable December 1 to holders of record November 10.

Chicago Great Western.—Preferred, $1.00, payable January 7 to holders of record December 7.

Chicago, South Shore & South Bend.—Class A Cumulative Preferred, $1.62½, quarterly, payable December 1 to holders of record November 15.

Maine Central.—Common, 1¾ per cent, quarterly, payable January 2 to holders of record December 15; Preferred, 1¾ per cent, quarterly, payable December 1 to holders of record November 15.

Missouri Pacific.—Preferred, $1.25, quarterly, payable December 31 to holders of record December 15.

Average Prices of Stocks and of Bonds

	Nov. 11	Last week	Last year
Average price of 20 representative railway stocks	89.37	95.48	117.17
Average price of 20 representative railway bonds	93.57	94.13	91.0

Railway Officers

Executive

Bradford W. Carlton has been appointed acting assistant to the president of the Chicago & North Western at Chicago.

J. L. Burns has been appointed assistant to the chairman of the board of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo.

C. G. Lunday, general manager of the Louisiana & Arkansas at Minden, La., has been elected vice-president, with headquarters at Shreveport, La.

C. E. Carlson, president of the Duluth, Missabe & Northern, with headquarters at Duluth, Minn., has also been elected president of the Duluth & Iron Range.

J. C. Yocum has been appointed assistant to the vice-president and general manager of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn.

F. R. Raiff, vice-president of the Copper River & Northwestern and the American Smelting & Refining Co., with headquarters at New York, has also been elected president of the Arizona Southern. **B. R. Hatcher** has been elected vice-president and general manager, and **F. E. Price,** assistant to the president and general manager, has been elected treasurer, both with headquarters at Tucson, Ariz.

Effective December 1, **Benjamin Campbell,** vice-president of the New York, New Haven & Hartford, in charge of traffic, will retire and **Frank J. Wall,** assistant to vice-president, will serve in the capacity of general traffic manager in charge of traffic for the railroad and subsidiary companies. Mr. Campbell will, however, retain his connection with the New Haven in an advisory capacity, assisting the president on traffic problems.

Frank G. Minnick, general manager of the Pittsburgh & Lake Erie and Lake Erie and Eastern, has been appointed special assistant to vice-president, with headquarters at Pittsburgh, Pa., as before. An announcement of this appointment appeared in the *Railway Age* of November 8, page 1013. Mr. Minnick was born on September 19, 1873, at Kent, Ohio, and was educated in the public schools. He entered railway service on July 5, 1891, with the New York, Lake Erie & Western (now the Erie) as a clerk in the office of the division superintendent at Kent. He then served on the Erie consecutively as station baggage agent, ticket clerk, freight clerk and assistant cashier, and also as a clerk in the transportation department of the same road at Cleveland, Ohio, until December, 1899, when he resigned to go into other business. He entered the service of the Pittsburgh & Lake Erie as a freight clerk at Rankin, Pa., on January 18, 1900. Mr. Minnick was appointed freight agent at New Castle junction the following October, and became assistant yardmaster at that place on January 1, 1902. He entered the office of the superintendent of transportation at Pittsburgh as a clerk on April 14, 1904, and three years later was appointed chief clerk in the transportation department. On May 15, 1912, he was appointed car accountant, and on May 1, 1916, superintendent of car service on the same road. On January 1, 1917, Mr. Minnick was appointed superintendent of freight transportation at Pittsburgh, and in November of that year was commandeered to act as general agent for the General Operating Committee at Pittsburgh. From December 4, 1917 until August 1, 1918, he was manager of the Eastern Railroads freight car pool, and from the latter date until May 1, 1919, was operating assistant on the Pittsburgh & Lake Erie, the Lake Erie & Eastern, the Monongahela, the Pittsburgh & West Virginia and the West Side Belt. He then became assistant federal manager of the same roads, and on March 1, 1920, was appointed assistant general manager of the Pittsburgh & Lake Erie. On July 1, 1926, he was appointed general manager, which position he was holding at the time of his recent appointment as special assistant to vice-president.

Frank G. Minnick

Operating

Charles W. Brown, general superintendent of the Lehigh & New England, has been appointed general manager of the Western Maryland, with headquarters at Baltimore, Md. This appointment becomes effective November 17.

H. S. Parrish, division superintendent on the Wheeling & Lake Erie, has been appointed superintendent of transportation, with headquarters as before at Brewster, Ohio, and the position of superintendent at that point has been abolished.

A. R. McNitt, freight claim agent of the Union Pacific, has been promoted to general freight claim agent of the Union Pacific System, including the St. Joseph & Grand Island, with headquarters as before at Omaha, Neb.

E. W. MacKinnon, chief despatcher of the Canadian National, has been appointed acting superintendent of the Island division, with headquarters at Charlottetown, P. E. I., succeeding **J. D. MacNutt,** superintendent, absent on leave account of illness.

George B. Betts has been promoted to car accountant of the Grand Trunk Western, with headquarters at Detroit, Mich., succeeding **O. F. Clark,** who retired on November 1. The position of assistant car accountant at Detroit, formerly occupied by Mr. Betts, has been abolished.

F. T. Wilbur, superintendent of telegraph of the Northern and Western lines of the Illinois Central, has been promoted to superintendent of telegraph of the entire Illinois Central System, with headquarters as before at Chicago. Mr. Wilbur gained his first railway experience as a Western Union messenger in the joint office of the Illinois Central and the Chicago, Burlington & Quincy at Mendota, Ill. Later he served as a train dispatcher on the Chicago & North Western in Iowa and in 1899 he entered the service of the Illinois Central in the same capacity at Kankakee, Ill. He then became chief dispatcher at Fort Dodge, Iowa, at Clinton, Ill., and at Carbondale, Ill., and in 1907 he was appointed supervisor of controlled manual block operations in the telegraph department. Mr. Wilbur was promoted to assistant superintendent of telegraph of the Northern and Western Lines in 1909, being advanced to superintendent of those lines later in the same year, remaining in the latter position until his jurisdiction was increased to cover the entire system.

Traffic

V. C. Kerr has been appointed general agent of the Dominion Atlantic, with headquarters at Boston, Mass.

R. T. Phillips, traveling passenger agent of the New York, New Haven & Hartford, has been appointed general agent of the passenger traffic department, with headquarters at New York.

C. S. Cox, coal traffic agent of the Kansas City Southern and the Texarkana & Fort Smith at Kansas City, Mo., has been promoted to general agent at Joplin, Mo., succeeding **E. W. Trott,** deceased.

Engineering, Maintenance of Way and Signaling

L. C. Sprague has been appointed consulting engineer of the Wichita Northwestern, with headquarters at New York.

A. B. Stone has been appointed bridge engineer of the Norfolk & Western, with headquarters at Roanoke, Va., succeeding **L. L. Kelly**, deceased.

Mechanical

W. W. Wells has been appointed master mechanic of the Midland Continental at Jamestown, N. D.

F. G. Moody, acting master car builder of the Northern Pacific, has been promoted to master car builder, with headquarters as before at St. Paul, Minn.

G. T. Goddard, general foreman in charge of the maintenance of electrical rolling stock of the Illinois Central, has been promoted to electrical engineer—equipment, with headquarters at Chicago.

J. P. Driscoll has been appointed master mechanic of the Erie at Jersey City, N. J., succeeding **S. J. Kelley,** and **C. J. Gerbes** has been appointed master mechanic at Secaucus, N. J., succeeding Mr. Driscoll. Mr. Gerbes will be succeeded as master mechanic at Hornell, N. Y., by **B. E. Jones,** supervisor of motor cars at New York.

M. L. Crawford, assistant master mechanic of the Northern division of the St. Louis-San Francisco at Monett, Ark., has been promoted to master mechanic of the Central division at Fort Smith, Ark., succeeding **J. D. Heyburn,** who has been appointed road foreman of engines on the Eastern division at Springfield, Mo. **W. F. Brandt,** general foreman at Springfield, has been promoted to assistant master mechanic of the Northern division to succeed Mr. Crawford.

Robert Hunt has been appointed assistant general superintendent, motive power, of the Seaboard Air Line, with headquarters at Norfolk, Va., and the position of mechanical engineer, in which capacity he served before, is abolished. The position of general inspector, freight and passenger equipment, formerly held by **W. J. Pardue,** is also abolished and Mr. Pardue has been appointed master car builder with headquarters at Norfolk. **W. E. Corr,** general foreman, car department, at Savannah, Ga., has been appointed assistant to master car builder, with headquarters at Norfolk, Va.

Purchases and Stores

T. A. Donovan has been appointed purchasing agent of the Canadian Pacific, New Brunswick district, with headquarters at St. John, N. B.

Special

E. F. Johnson, general agricultural agent of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., has resigned to engage in other business.

G. G. Baird, assistant land commissioner of the Canadian National at Winnipeg, Man., has been appointed land commissioner, with the same headquarters, succeeding **E. A. Field,** who has retired. **O. S. Clefstad,** collection manager in the land department, has been appointed assistant land commissioner, succeeding Mr. Baird.

Obituary

Robert L. France, lumber and fuel agent of the Southern Pacific with headquarters at San Francisco, Cal., died in that city on October 15, at the age of 58 years.

E. O. Thedens, master car builder of the Chicago & Illinois Midland, with headquarters at Taylorville, Ill., died at St. John's hospital at Springfield, Ill., on November 9.

Charles E. Wachtel, secretary and treasurer of the Duluth & Iron Range, with headquarters at Duluth, Minn., died at a hospital in that city on November 6, after a brief illness.

E. W. Trott, general agent for the Kansas City Southern at Joplin, Mo., died at St. Mary's hospital at Kansas City, Mo., on October 25, following an operation and a year's illness.

David T. Crawford who died on October 1 at Battle Creek, Mich., was superintendent of the Chicago division of the Grand Trunk Western with headquarters at Battle Creek. It was erroneously reported in the *Railway Age* of November 1, page 965, that Mr. Crawford had been superintendent of terminals at Pontiac, Mich.

Thomas J. Milner who in 1884 was engineer in charge of the design and construction of the Georgetown loop near Georgetown, Colo., on the Georgetown, Breckenridge & Leadville (now a part of the Colorado & Southern), died at Portland, Ore., on November 7 at the age of 81 years. Mr. Milner who was a native of Ohio first engaged in railway engineering in Colorado about 1870. Later he was chief engineer of a number of western short lines including the Columbia & Puget Sound (now the Pacific Coast Railway) and the Denver & Intermountain. He undertook one of the first surveys for the Moffat tunnel.

William P. Hayden, assistant general manager of the Colorado & Southern, with headquarters at Denver, Colo., died in that city on November 6, after a day's illness, at the age of 62 years. Mr. Hayden had been connected with the Colorado & Southern for more than 30 years. He entered railway service as a clerk in the mechanical department of the Union Pacific, Denver & Gulf (now the Colorado & Southern) when it was a subsidiary of the Union Pacific. When the road emerged from a receivership and was reorganized as the Colorado & Southern in 1898, he became chief clerk in the mechanical department. Later he was transferred to the transportation department. Mr. Hayden had been assistant general manager since 1917.

James T. Wallis, assistant vice-president in charge of operation of the Pennsylvania, died suddenly at noon on November 7, at his home in St. Davids, Pa. He was born in New Orleans on June 11, 1868, and attended the University of Louisiana, Georgetown College and Stevens Institute, graduating from the latter in 1891, with the degree of mechanical engineer. He entered railroad service in 1891, as an apprentice in the West Philadelphia shops of the Pennsylvania and was promoted through the successive grades of assistant road foreman of engines, assistant master mechanic, assistant engineer of motive power, master mechanic and superintendent of motive power. In May, 1911, Mr. Wallis was advanced to superintendent of the West Jersey & Seashore and in January, 1912, he was appointed general superintendent of motive power with headquarters at Altoona. In March, 1920, he was promoted to the position of chief of motive power with supervision over the motive power department of the entire system. In this capacity he was also in direct charge of the Pennsylvania's locomotive and car shops at Altoona. He was appointed assistant vice-president in charge of operation in February, 1927, the position he held at the time of his death. Since October 10, 1922, Mr. Wallis had served as president of the Eastern Railroad Association.

James T. Wallis

THE GREAT WESTERN OF GREAT BRITAIN has recently awarded a contract for the necessary material and erection of 13 waterfront coal hoists at Barry, Wales. The contract, which involves an expenditure of £200,000 (approximately $1,000,000), was awarded to Vickers, Armstrong, Ltd. Another recent contract awarded by this road involved an expenditure of about £40,000 (approximately $200,000) for a new steamship to be used in service out of Plymouth.